Letters from Service Men

How Should Belt Sizes Be Listed?

Shaffner Lukens
Distributor of Vee-Round-Flat Belts
908 Whitby Ave.
Yeadon, Del. Co., Pa.
Landsdown P. O.
Sept. 19, 1936

Gentlemen:

In looking over your specifications on household electric refrigerators, I notice you have added belt sizes.

This is very fine data, but the way it is listed in your specifications does not mean a thing, you say belt *circumference* but do not state this is the *inside* or *outside* circumference, this makes a difference of from 1½ to 3 inches in the circumference of the belt.

As most of the belt manufacturers show the outside circumference, I would use this in my specifications.

You could also show the number of belts used on the compressor, as a number of manufacturers such as General Electric, Crosley, Leonard and Frigidaire use two belts on household jobs.

Trusting you will find this information helpful in making up your next specifications, I remain

S. LUKENS

Answer: We devoted considerable thought to this question in planning the arrangement of data. The problem was complicated somewhat by conflicting advice from various sources and a wide variety in the methods used by various companies to specify belt sizes.

We finally took it upon ourselves to set up a standard method of specifying the belt size in two figures, using the first number for the circumference in inches and the second number for the width in sixty-fourths of an inch. We were of the opinion that this system would be very easy to understand and would avoid the confusion which would ensue if we attempted to follow the various methods used by different companies.

Regarding the matter of outside or inside circumference, we were advised by refrigeration supply jobbers that it does not make a great deal of difference since any belt which is within a couple of inches of the size specified will work on the average refrigerator. Actually, most of the sizes given are *outside* circumference, only a few are for inside, and in some cases we were unable to determine which was used.

We agree with you that it will be very desirable to add information regarding the *number of belts* used on each model since many commercial units require two or more. We will definitely plan to include this information in the 1937 edition.

Copeland and Grunow Manuals Needed

Geo. S. Gularte Appliance Service
P. O. Box 123, Wasco, Calif.

I find that you are in a better position to obtain for me the service manuals on all models of the Copeland refrigerator, and models of the Grunow.

This request is due to my starting in the servicing of all makes of electric refrigerators. I feel that I am capable of handling all this service, with the eight years of experience in the refrigerator field. The territory that I am establishing my business, has a large number of the above makes, that need the care of a local service man.

Not knowing what the cost of these service manuals are, you may, or have them sent to my address C.O.D.

I have your MASTER SERVICE MANUAL at hand, and sure find it a great help to me. I am also sending you a check or money order, by Oct. 1st for your REFRIGERATION NEWS. I think that every experienced service man should have the NEWS on hand at all times.

I would also like to be placed on your mailing list. Hoping that this request may prove satisfactory to you, and thanking you in advance.

GEORGE S. GULARTE

Note to Copeland and Grunow companies: Will you supply Mr. Gularte with the desired manuals?

You Have A Good Idea

Refrigeration Service for Ammonia Machines—Baker Parts & Service
1926 N. E. Liberty St., Portland, Ore.
Sept. 20, 1936.

Gentlemen:

Will you kindly place my name on your catalog mailing list of refrigeration service men?

Now that George is safely home again why not have him take a swing arounnd the States and report his findings in the NEWS. There are many interesting installations and dealer set-ups right in our own country and I am sure everyone will enjoy reading about them—if George does the writing.

LEROY WILLIAMSON.

Technical Bulletins Wanted

Progressive Refrigeration
Commercial and Domestic—24 Hour Service—Dairy Installations A Specialty—Refrigeration Service Engineer
1835 Greenwood Ave.
Trenton, N. J.

Gentlemen:

I am a recent addition to the ranks of "ELECTRIC REFRIGERATION NEWS" subscribers. I would like you to place our name on your catalog mailing list. Also we are interested in technical bulletins pertaining to research in the industry. Thanking you in advance.

LOUIS LOURIA

Ask for Engineering Data

Modern Electric Appliance Co.
322 Orange Street
Springfield, Mass.
Sept. 14, 1936

Gentlemen:

Please place our name on the Mailing list for catalogs and engineering information on Refrigeration.

We wish to compliment you on the splendid paper you are publishing. It is a gold mine of information.

Please note our change in address.

Modern Electric Appliance Co.

Air Conditioning Dealer

A. H. Lumm Co.
Commercial Refrigeration Dept.
Kelvinator Electric Refrigeration, Automatic Heating, Liquid Cooling, Air Conditioning
2512 Albion St.
Toledo, Ohio

Gentlemen:

Kindly place us on the Manufacturers List to receive bulletins on Air Conditioning and Automatic Heating.

H. J. SHAFER

Wants All Catalogs

Southern Engineering Sales Co.
Wholesale only
311 Peachtree Street, N. E.
Atlanta, Ga.
Sept. 4, 1936

Gentlemen:

Please place my name on your mailing list so that I can obtain all catalogs from various manufacturers.

Shall appreciate this courtesy.

M. BUELL

Subscription & Catalogs

Anderson-Stromenger, Inc.
5207 Richmond St.
Erie, Pa.

Enclosed you will find a check for $3.00 for a one year subscription to the ELECTRIC REFRIGERATION NEWS. We are sorry that we neglected to take care of this matter sooner.

Please enter our name on your Catalogue Mailing List.

H. H. STROMENGER, Pres.

Commercial Service Manual

This week's instalment of the Commercial Service Manual by K. M. Newcum has been omitted because of the failure of certain necessary cuts to arrive. The series will probably be resumed in next week's issue.

'Best Ever Published' In Refrigeration Field

33 Donald Pl.
Union, N. J.

Editor: Find enclosed money order for MASTER SERVICE MANUAL and renewal of my subscription to the ELECTRIC REFRIGERATION NEWS. Please send me back copies of the issue I have missed. The last issue received by me was July 22, '36.

JOHN E. HERSON.

P. S. Just to let you know I think your magazine is the best ever published along the lines of Refrigeration.

Wants Trade Literature

I would appreciate it if you will include my name on the Catalogue Mailing Service List and Trade Literature that you are forming. I am a subscriber to this publication and like it very much.—Irving Miglietta, I. and J. Miglietta, Box 66, So. Glastonbury, Conn.

New Service Man

I am enclosing money order for $5.25 to cover a year's subscription to the ELECTRIC REFRIGERATION NEWS, the MASTER SERVICE MANUAL, and a copy of the issue on household refrigerator Specifications. Also, please add my name to your catalogue mailing list.

I am a recent graduate of the M.S.O.E. of Milwaukee, Wis. and I intend to open a place of my own in this city.—D. H. Bowers, 1545 First Avenue S. E., Cedar Rapids, Iowa.

They Both Look Forward To the Weekly News

I want to tell you boys how much I look forward to your publication, and I hope you continue the good work.

Also, please have my name placed on the manufacturer's mailing list.—Irvin L. Rubbelke, 486 So. Hamline Ave., St. Paul, Minn.

Please put my name on your catalogue mailing list. I have been a consistant reader of REFRIGERATION NEWS for the past two months and find it very interesting. Each week I look forward to coming of the new issue.—A. Lewis, 70 So. 10th St., Brooklyn, N. Y.

Additional Requests for Catalog Mailing Service

Victor Laven, Calumet Refrigeration, 4001 Main St., East Chicago, Ind.

J. W. Peacock, 5322 Sierra Villa Dr., Los Angeles, Calif.

Joseph Vinopal, 13404 Second Ave., East Cleveland, Ohio.

Walter F. Kugel, N. Arlington, N. J.

Refrigerator Motor Co. Opens Chicago Branch

PHILADELPHIA — Electric Refrigeration Motor Co., distributor of Ermstat motor controls, last week announced the opening of an electric motor repair shop in Chicago.

The new shop was necessitated, according to president Geo. C. Tatem, by the increased volume of motors being received from the middle west, and the desire to give efficient service to customers in this territory.

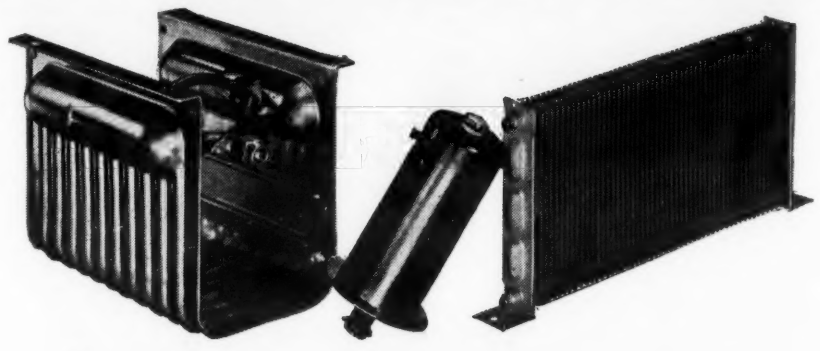
William F. Weirich is supervisor of the new plant. Until his promotion, Mr. Weirich was general manager of the company's Philadelphia branch.

McKinley Enters Jobber Field in Fort Worth

FT. WORTH, Tex.—McKinley Refrigeration Supply Co. has entered the wholesale refrigeration parts and supplies jobbing field in this territory. Headquarters of the company are at Jennings and 12th St.

The Buyer's Guide
Suppliers Specializing in Service to the Refrigeration and Air Conditioning Industries

SUPPLYING THE REFRIGERATION INDUSTRY

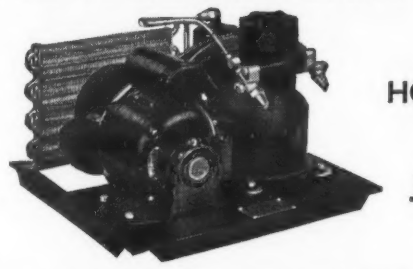


Evaporators, Receivers, Condensers, Compressor Domes, Compressors and Mechanical Parts. Also "Houdize," a perfected process for permanently uniting ferrous or non-ferrous metals.

OAKES PRODUCTS CORP. North Chicago and Decatur, Ill.
HOUDE ENGINEERING CORP. Buffalo, New York

DIVISIONS OF HOUDAILLE-HERSHEY CORPORATION
General Executive Offices: Detroit, Mich.

CONDENSING UNITS and COMPRESSORS



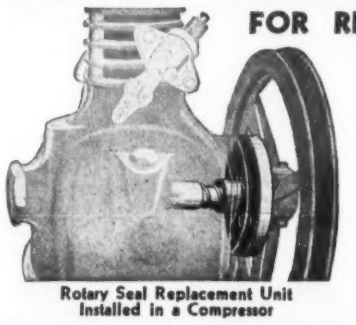
FOR HOUSEHOLD REFRIGERATION BY JOHNSON MOTOR CO.
Waukegan, Ill.
MANUFACTURERS OF THE WORLD FAMOUS SEA HORSE OUTBOARD MOTORS

MILLS COMPRESSORS
for Commercial Use
Mills Novelty Company • 4100 Fullerton Avenue • Chicago, Illinois

(Light Commercial Unit)

"CHIEFTAIN"
QUALITY-BUILT COMPRESSORS and CONDENSING UNITS
All bearings diamond bored. Positive lubrication of parts by newly developed process plus forced feed lubrication in all models.
Sizes: 1/6, 1/5, 1/4, 1/3 h.p.
Write for prices
TECUMSEH PRODUCTS CO., Tecumseh, Mich.

ROTARY SEAL REPLACEMENT UNITS
FOR REFRIGERATOR COMPRESSORS



Rotary Seal Replacement Unit Installed in a Compressor

• QUICKLY AND EASILY INSTALLED
• SAVE TIME AND TROUBLE
• PREVENT SHAFT LEAKS

With the many acknowledged advantages; ROTARY SEAL UNITS are unquestionably the most perfect replacement seal units available.

STRONG, ECONOMICAL, SILENT
GUARANTEED TO GIVE PERFECT SATISFACTION
ROTARY SEAL COMPANY
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Refrigeration Parts are *Certified to Excel*
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Ask for catalog covering complete line of Compressor Parts, Valves, and Fittings
PERFECTION REFRIGERATION PARTS CO.
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THE NEWSPAPER OF THE INDUSTRY

AIR CONDITIONING AND

REFRIGERATION NEWS

WRITTEN TO BE READ ON ARRIVAL

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WESTINGHOUSE GETS MILLION DOLLAR ORDER

Sales at Annual Dairy Exposition Indicates Buying Attitude Of Commercial Users

New and Replacement Markets for Ice Cream Cabinets Are Active

By Phil B. Redeker

ATLANTIC CITY, N. J.—The giant dairy industry, particularly the retail end of the business, is in an equipment-buying mood again.

That was the uniform impression gained from interviews with exhibitors at the biennial Dairy Industries Exposition held last week in this "convention city," with the exhibits, completely filling every nook and cranny of the main and basement floors of the huge Auditorium, bearing out the claim that the Dairy Industries Exposition is America's biggest industrial show.

Actual buying at this year's show was greater than that at the two previous shows, exhibitors believe, which should extend the buying trend which has seen equipment sales hold up during September and the early part of October.

The experience of Harold Schaefer, Inc., ice cream cabinet manufacturer, who wrote $20,000 worth of business on the trip East for the show, is typical of the business being reported.

In the retail division of the dairy industry the two great markets for refrigeration equipment at present are (1) new types of outlets; and (2) replacement installations.

In their merchandising policies the ice cream manufacturers have made determined efforts to increase their number of "stops" and in doing so they have put their product in retail stores where the volume of business was not large enough to justify large cabinet equipment, thus opening up a market for a new type of equipment in the form of chest and small portable cabinets.

The sudden and fast growth of the retail dairy store has also opened up markets for new types of equipment.

While the all-dairy-products store

(Continued on Page 2, Column 1)

Lang Heads New G-E Advertising Dept.

SCHENECTADY—With the consolidation of advertising sections of the appliance and merchandise departments of General Electric Co. located at Bridgeport and Cleveland, Vice Presidents C. E. Wilson and E. O. Shreve have announced that Chester H. Lang, manager of the publicity department, will be in charge of this division, as well as of apparatus and general advertising.

Mr. Lang has been manager of the G-E publicity department since January, 1932, prior to which he was comptroller of the budget. He is a native of Erie, Pa., a graduate of University of Michigan, and has been associated with General Electric since leaving the army in 1919. He is also manager of broadcasting for General Electric and chairman of the board of the Advertising Federation of America.

Are Refrigerators An All-Year Round Commodity? —Ask the Alaskans

JUNEAU, Alaska—Salesmen who want an extra talking point to prove their story on the year-round need for electric refrigeration can point to the record of ownership of electric refrigerators in this city, where below-freezing temperatures are experienced about three-quarters of the year.

A survey of 2,000 homes in Juneau, completed last week by the Alaska Electric Light & Power Co., revealed that more than 1,000 electric refrigerators are in use in the town.

And the survey will make it necessary for those salesmen who get together in Atlantic City to sing the praises of their No. 1 man to think up a better line than: "Why, he could sell refrigerators in Alaska."

Kelvin Model Home Formally Open to Detroit Public

DETROIT—The Kelvin Home, Kelvinator's effort to bring the benefits of air conditioning to families of moderate means, was formally opened to the public last Wednesday with a luncheon at Detroit Athletic Club, an inspection of the original residence in Rosedale Gardens, and a tour of other homes already erected in Detroit.

Government representatives and leaders in the building and allied industries attended the luncheon and dedication ceremonies.

Based on standardized floor plans with varied exterior designs, the homes are designed so that they may be reproduced by local construction firms throughout the country, employing local labor and capital, and making use of local material and supplies.

Located at 11420 Blackburn Ave., the Rosedale Gardens home is equipped with an electric range and refrigerator, and has year-round air conditioning. It can be built at an estimated cost of $7,000.

Speakers at the luncheon held at the Detroit Athletic Club before the house opening, included: Peter Grimm, former president of the Real Estate Board of New York; Dr. Shirley Wynne, former New York City health commissioner; Francis Keally, New York architect; and Lulu G. Graves, dietician. Walter McLucas, president of the National Bank of Detroit, introduced the speakers.

"I know of no more important subject affecting the internal welfare of our country today than that of housing. Providing modern homes is supplying a national need, the satisfaction of which requires the cooperation of every element in the community," said Mr. Grimm.

George W. Mason, president of Kelvinator Corp., answered Mr. Grimm's speech, and told what the company plans to do in the line of future home development.

Leonard Names Capelli & Kimberlin to New Posts On Pacific Coast

DETROIT—Two changes in its Pacific Coast personnel recently were announced by Leonard Refrigerator Co.

R. W. Kimberlin, formerly merchandise manager for Graybar Electric Co., Leonard distributor in San Francisco, is now manager of the Graybar branch which serves as Leonard distributor in the Salt Lake City district.

D. H. Capelli, associated with Leonard merchandising on the West Coast for several years, succeeded Mr. Kimberlin in San Francisco.

Jobbers to Meet Nov. 11 At Peabody Hotel In Memphis

DETROIT—With such pertinent problems as jobber qualifications, quantity discounts, and resale price policies on the docket, the National Refrigeration Supply Jobbers' Association annual convention will be held Nov. 11-14 at the Peabody hotel in Memphis, Tenn., it was announced last week by Frank J. Gleason, executive secretary of the association.

All official business of the association will be transacted at the all-day business session the first day, Wednesday, Nov. 11. This meeting will be open to members only. During the rest of the meeting the jobbers will meet with parts manufacturers and service men.

Main event on the entertainment program is the association banquet at 6:30 o'clock Wednesday night, Nov. 11, to which non-member jobbers are invited.

Following is the official order of business for the Wednesday, Nov. 11, business session:

10:00 a. m.—Meeting called to order and roll call.

10:20 a. m.—Reading and approval of minutes of previous organization meeting. Ratify date change of annual meeting from October to November. Call for resolution for charter amendments to constitution.

10:40 a. m.—Reading of communications.

11:00 a. m.—Reading and approval of treasurer's report.

11:05 a. m.—Report of committees.

11:15 a. m.—Open discussion of members including jobber qualifications.

12:30 p. m.—Luncheon in private dining room.

2:00 p. m.—Reconvene for afternoon session.

2:10 p. m.—Resume open discussions; quantity discounts, catalogs, cash discounts, and resale price policies scheduled as topics. The chair will ask for other discussions or recommendations from the members.

5:00 p. m.—Recess.

6:30 p. m.—Assemble for association's banquet in private dining room, Peabody hotel. F. M. Cockrell, publisher, AIR CONDITIONING AND REFRIGERATION NEWS, toastmaster.

8:00 p. m.—Address by association President H. S. McCloud.

8:20 p. m.—Report of nominating committee and election of nominees.

8:45 p. m.—Adjournment.

(Nov. 12, 13, and 14—Meeting with manufacturers and service engineers.)

Swank Appointed Sales Manager of Cellufoam

CHICAGO—C. V. Swank, until recently assistant purchasing agent for Servel, Inc., and before that with Frigidaire Corp., was recently appointed sales manager of the new insulation division of Cellufoam Corp. of New Jersey, located here.

Cellufoam's new plant was to have been in operation Oct. 15, more than tripling previous production, company officials declare.

Guyton Store Solves Collection Problem by Getting Bank to Handle Time Payments

BUTLER, Mo.—B. B. Guyton, owner of the Guyton Electric Store here, has solved his knottiest problem—collections—by arranging with a local bank to handle all his time payment accounts, and letting his customers make their payments to the teller instead of to himself.

All the store's time payment paper was purchased last year by the bank, and carried at a straight 8%. During the year Mr. Guyton carried in a restricted account an amount totaling 20% of the total paper.

This year the same policy was carried out, but the bank required only a 10% deposit on mortgages held.

Customers purchasing refrigerators or other electric appliances on time payment plans pay all due amounts at the bank. This plan has been in operation over 18 months, and so far only one person has defaulted.

"People who would stall a merchant walk right into a bank and pay what is owing without a murmur," Mr. Guyton explains. "I lose deals by this plan, but they are usually deals I am glad to lose. If a man is unwilling to pay through a bank window, I assume he's shaky credit in his own mind."

At the time of purchase, Mr. Guyton makes out both a chattel mortgage and a note, one copy of which is placed at the bank, one filed in his office.

"This 8% is a good insurance against losses," Mr. Guyton declares. "It's money well spent, because it frees your mind from concern over time payments, and you can concentrate your energies on promotional selling."

Government Awards Contract For 16,697 Refrigerators for 34 Housing Projects

Trade Policies to Be Main Topic at Parts Makers' Convention

DETROIT—Discussions of trade policies covering many types of manufacturer-jobber relations are scheduled for the annual meeting of the Refrigeration Supplies and Parts Manufacturers Association, which will be held Nov. 10 at the Peabody hotel, Memphis, Tenn., as reported in the Sept. 30 issue of AIR CONDITIONING AND REFRIGERATION NEWS.

Among the various trade policies which are expected to come up for discussion are the following: (1) contractual arrangements; (2) comparative discounts and quantity schedules to manufacturers, jobbers, distributors, and dealers (do quantity schedules apply at one time and shipped to one place or over a period of time and shipped to two or more locations? Also, what has been the manufacturers' policy with regards to short quantities and quantities in excess of specified amounts?)

(3) freight allowances; (4) cash discounts; (5) jobber qualifications and recognition; (6) syndicate buyers; (7) catalogs (uniform date of issuance, uniform size, gratis or charged for, allowances if printed by others; (8) uniform warranties; (9) extent of manufacturers' contingent liability in connection with use of their products (10) obsolete or discontinued products —are they returnable; (11) resale price policies.

Following is the complete program for the Tuesday, Nov. 10, meeting:

10:00 a. m.—Call to order and roll call.

10:20 a. m.—Reading and approval of minutes of previous organization meeting. Reading and approval of treasurer's report.

10:35 a. m.—Ratify amendments to original constitution: (a) Change date of annual meeting from October to November. (b) Provide for voting by mail ballot.

10:40 a. m.—Call for resolutions (if any) for charter amendments to constitution.

10:50 a. m.—Open discussion of manufacturers' trade policies, including the following major items:

Comparative discounts and quantity schedules to manufacturers, jobbers, distributors, and dealers. Catalog policies. Uniform warranties. Obsolete or discontinued products. Resale price policies.

The chair will call for comments and discussion on other policies and problems and for suggestions as to how the work of the association can be improved.

12:30 p. m.—Luncheon.

2:00 p. m.—Reconvene.

2:10 p. m.—Ten-minute address by President J. D. Colyer on Product Classification Committees, their objectives and functions.

2:20 p. m.—Introduction of committee chairmen.

2:25 p. m.—Five-minute talk by each of the nine chairmen.

3:10 p. m.—Individual group meetings of members according to their product classification.

5:15 p. m.—Reassemble in main convention hall.

5:20 p. m.—Report of group committee chairmen.

6:00 p. m.—Recess.

7:30 p. m.—Assemble for association's banquet—Parlor A, Peabody hotel—for members and their wives. Toastmaster, F. M. Cockrell, publisher of AIR CONDITIONING AND REFRIGERATION NEWS (non-member manufacturers are invited to attend this banquet).

9:05 p. m.—Address by J. D. Colyer, president.

9:35 p. m.—Report of nominating committee on nominees for the following: president, vice president, secretary-treasurer, three directors—long term (three years), one director—short term (one year).

9:40 p. m.—Election of the nominees.

9:45 p. m.—Introduction of directors and officers elected.

10:00 p. m.—Adjournment.

Bid Is Granted on Basis of Unit Price Plus Operating Cost for 10 Years

WASHINGTON, D. C.—Westinghouse Electric & Mfg. Co. has been awarded the contract to furnish 16,697 household electric refrigerators to the government for use on 34 housing projects, according to H. A. Gray, director of housing, Federal Emergency Administration of Public Works.

The contract is said to be the largest single order for electric refrigerators ever placed by a "consumer" purchaser.

Manufacturers bidding on the contract were required to submit two figures to the government, the first covering unit price of the refrigerators, and the second the guaranteed cost of operation over a period of 10 years.

On this basis, Westinghouse's "evaluated" bid of $115.81 per unit was low among the eight manufacturers who submitted bids on the projects. Total amount of the bid was $1,129,223.04.

Specifications on which the bids were based included four performance

Bids and operating cost guarantees submitted by eight manufacturers on the government contract were published in the Sept. 2 issue, and complete government specifications for the bids were published in the Sept. 16 issue of the News.

tests, to be made by the manufacturer in his own laboratory, subject to a later check by the government. Two of these tests were to be made with the refrigerator cabinet empty, the other two with a partial heat load in the food storage space.

The specifications also included a

(Concluded on Page 5, Column 1)

Sunbeam to Begin Cabinet Production

EVANSVILLE, Ind.—Sunbeam Electric Mfg. Co., which makes the refrigeration unit for the Coldspot household electric refrigerator sold by Sears, Roebuck & Co., will manufacture a portion of its own cabinets next year. Previously all Coldspot cabinets have been turned out on a contract basis by independent cabinet makers.

Construction of a large addition to the plant facilities of the Sunbeam factory was begun last week on Morgan Ave. here, under the direction of President W. A. Carson, Vice President J. H. Schroeder, and Chief Engineer Howard Dennedy. The new building will house cabinet construction lines when completed.

Roslyn Electric Takes on Superfex Franchise

GREENVILLE, Miss.—Roslyn Electric Co., local electric appliance concern headed by R. A. Montgomery, was recently appointed distributor in a group of Mississippi counties for Superfex oil-burning refrigerator, manufactured by Perfection Stove Co., Cleveland.

Roslyn Electric had operated for several years as a Superfex dealer.

Hudson Heads Commercial Sales for Wayne Spinks

MEMPHIS, Tenn.—Wayne Spinks Co., local Norge distributor, recently announced appointment of W. M. Hudson, Memphis engineer-salesman, as sales manager for Norge commercial refrigeration here.

W. N. Fry, long identified with the refrigeration trade in Memphis, has been appointed a dealer for Norge household and commercial equipment.

McCord
Refrigeration and Air Conditioning
PRODUCTS

CONDENSERS
COMMERCIAL EVAPORATORS
DOMESTIC EVAPORATORS
COMFORT COOLERS
MARKET COOLERS
AIR CONDITIONING SURFACE
UNIT HEATERS
BLAST HEATING SURFACE
CATALOGS ON REQUEST

McCORD RADIATOR & MFG. CO.
DETROIT, MICH.

Dairy Men Are in Equipment Buying Mood at Biennial Industry Exposition

(*Continued from Page 1, Column 1*)

is more generally thought of as being a "big city" proposition, because of the elaborate construction of some of these stores in metropolitan areas, the idea has spread to smaller towns.

"I'd be willing to wager that there isn't a town of 5,000 population or more in all the Southwest states that doesn't have at least one double-dip place, and many of these towns have the complete retail store," declares Oliver Shaw of the Anheuser-Busch ice cream cabinet division.

"Maybe things are kind of slow with them during the week but they dish the ice cream out as fast as they can handle it on weekends."

The replacement market on ice cream cabinets has been active for some time. In W. G. von Meyer's story on the development of the ice cream cabinet industry published in the Oct. 7 "Pioneer Number" of the NEWS, he presented figures from a survey made early in 1927 which showed that more than 90,000 ice cream cabinets were in use at that time.

Thus, there are that many cabinets which have been in use for 10 years and a great many of these have been replaced, or are in need of replacement or major repairs.

Many such old cabinets are scrapped and replaced by new cabinets with up-to-date refrigerating equipment and modern design.

Many others are being equipped with new refrigerating systems in the form of "changeovers," and the various designs of these "changeovers" attracted much attention at the show.

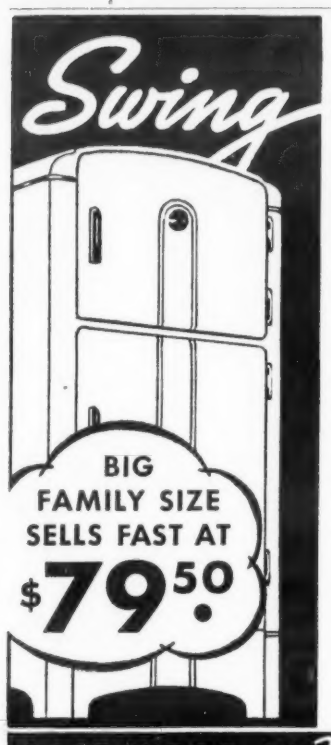
These changeovers are used principally in cases where the cabinet exterior and insulation are still in good shape, but in which the old brine system evaporators have lost their efficiency, or have rusted away parts of the inner liner.

In making the change the cabinet "inards" are taken out and a new interior, of which the evaporator is an integral part, is fitted into the old insulated frame, and proper connections made to the compressor.

Such cabinet modernization, say manufacturers of changeover equipment, is undertaken by manufacturers for two reasons; (1) they can keep the cabinets in operation and the retailer fairly well satisfied without replacing the old equipment with brand new cabinets; (2) major ice cream manufacturers have refrigeration service departments which they try to keep intact the year around; in the winter time, however, the work slacks off considerably and making these changeover installations keeps them busy.

Changeover systems for ice cream cabinets were exhibited at this year's Dairy Industries Exposition by Frigidaire Corp., Standard Body Corp., Savage Arms Corp., and Dole Refrigerating Co. The equipment offered by each of these concerns is described in the following resume of exhibits at the show which were of interest to the refrigeration industry.

Swing
OVER TO GREATER PROFITS WITH
Coolerator
The Air Conditioned Refrigerator



● **No Repair Service Problems**—because there is no machinery to need repairs. You get a generous margin of profit—and keep it!

● **Low Prices—Complete Line**—Resale prices from $39.75 to $535.00, food chambers from 2½ to 50 cubic feet.

● **A New Story:** "Fresher foods at half the Cost" —with washed, humidified, circulated cold air—*ice cubes in 5 minutes* . . . frozen desserts in 45. Many other exclusive features.

● **Nationally Accepted,** nationally advertised. Makes Coolerator easy to sell. 300,000 in use—work through local ice company.

Write, wire or telephone today for all the facts!

THE COOLERATOR COMPANY • DULUTH, MINN.

LAST WORD IN Modern REFRIGERATION
The ANSUL Twins
DEPENDABLE NOT SPECULATIVE

ENGINEERS LIKE THEIR EFFICIENCY

MANUFACTURERS LIKE THEIR ECONOMY

SERVICE MEN LIKE THEIR CONVENIENCE

ANSUL CHEMICAL COMPANY
MARINETTE » » » » » WISCONSIN

Manufacturers Show New Products at Dairy Exhibit

Anheuser-Busch

Exhibited a complete line of ice cream dispensing, storage, and hardening equipment. Also displayed the Copeland commercial refrigerating machines which are used with Anheuser-Busch equipment. Featured new style cabinets with all-enamel finish and rounded corners.

Represented by: G. G. Kindervater, O. E. Shaw, L. B. Cummings, J. J. Ernst, R. E. Vaughan, F. H. Marx, A. A. Beckmann, E. J. Schrader, and F. U. Graham.

Armstrong Cork Co.

Exhibited: Armstrong's corkboard insulation; Armstrong's cork covering; Armstrong's insulation sundries; Armstrong's corkbrick; Armstrong-Corning wool insulation.

Represented by: L. R. Harbaugh, S. C. Martin, E. C. Lloyd, A. P. Tingle, and Gray Playter.

The Balsa Wood Co.

Exhibited: Lata Balsa Wood for insulation purposes.

Represented by: E. Howard Figg, J. T. Downey, T. A. Skogman, H. W. Streuli, D. B. Hains, and H. T. Winner.

Century Electric Co.

Exhibited the new Century Whitaker-Upp automatic electrical power system for truck refrigeration units; and Century electric motors.

The Century Whitaker-Upp system for powering truck units is now driven directly from the crankshaft, operating through a generator which is so arranged that a constant voltage is provided at all times. Also, the power system will run off of either a.c. or d.c. current provided from standard voltage outlets in a garage or warehouse.

Represented by: R. J. Russell, Geo. Smith, George Pechin, James Larkin, Fred Powers, R. L. Smith, A. T. Brown, A. Neher, George Henderson.

Curtis Refrigerating Machine Co.

Exhibited: Curtis condensing unit, in various sizes, and in both air-cooled and water-cooled models, for all types of air-conditioning and refrigeration applications.

Condensing units exhibited by Curtis were 1937 models, with the following improvements: Condensers are so designed and shrouded as to get full effect of forced air cooling with resultant increase in efficiency.

Units in the 1937 line of 1 hp. and larger size have Timken tapered roller bearings.

New base construction consists of cast legs, and pressed steel base.

Featured in the display was an operating model of a compressor so arranged as to afford a view of the operation of the Curtis exclusive "Centro-Ring Positive Pressure Oiling System." In this system, with only one moving part, the oiling ring alone moves through the oil in the crankcase and then, riding around on a V-groove on the crankshaft, distributes oil to such parts of the compressor as is necessary for lubrication purposes.

Represented by: H. C. Morrison, H. H. Nettler, W. R. MacFadden, H. J. Campbell, W. C. Hecker, M. A. Grohman, E. I. Snead, E. S. Lape, and W. M. Clow.

Dole Refrigerating Co.

Exhibiting: the Doleco vacuum cold plate with holdover feature for ice cream cabinets, storage rooms, and refrigerated trucks.

Featuring: the Doleco plate for use as a conversion unit in old ice cream cabinets and soda fountains. These units are constructed with cold plates solidly connected into one unit arranged so as to be adjustable both ways to allow for slight variations in the cabinet size.

The plates are smooth and have a hold-over solution which is said to reduce refrigeration costs. The conversion units are made in sizes to fit standard ice cream cabinets, but can be obtained in any size to fit any cabinet or soda fountain.

Plates are made with cutouts to permit easy installation, and looped tubing to permit adjustment without disconnecting the tubing. All connections are solidly brazed in place. A thermostatic expansion valve is used.

Represented by: Edwin J. Tweed, H. E. Clay, L. A. DeMore, R. E. Shaw, H. W. Kleist, J. D. Hollowell, Jr.

Dry Ice, Inc.

Exhibited Dry-Ice and food storage equipment for use with Dry-Ice.

Represented by: W. W. Ogier, Jr., G. C. Cusack, C. W. King, T. D. Carlisle, Stuart Root, W. A. McCleary, N. W. Whipple, V. R. Payne, J. D. Puller, C. R. Hilton, C. P. Smith, and E. P. Mitchell.

The Fischman Co.

Exhibited ready-for-service-bar complete with back bar, soda unit, counter ice cream cabinet, and soda bar. Also soda bar and dairy bar.

Represented by: Maurice I. Fischman, Leo Fischman, Arthur M. Fischman, Abe Fischman, Harry Fischman, and Myron Fischman.

Frick Co., Inc.

Exhibited 5 x 5-inch ammonia compressor with its two cylinders cut away to show the working parts; 7¾ x 5-inch Freon-12 compressor; both these machines turned over slowly by reduction gear motors; 4-cylinder V-type refrigerating unit of 20 hp.; 1-hp. low-pressure refrigerating unit suitable for milk cooling, markets, delicatessens, etc.; electric control valve, cutaway to show action of parts when current is switched on.

Represented by: W. H. Aubrey, L. H. Maxwell, P. H. Buch, Terry Mitchell, H. B. Pennington, Cyril Leech, H. N. Borgstedt, J. T. Murphy, M. B. Weinberg, and A. S. Workman.

Frigidaire Corp.

Exhibiting a complete line of ice cream cabinets, including new 8 and 12-hole portable cabinets; condensing units for applications in the ice cream field; milk cooling apparatus.

Featuring a direct expansion changeover assembly for old cabinets. Cabinet liner constructed of Armco galvanized steel, with four bends of refrigerant tubing "flood soldered" to the exterior of the liner. Assembly comes complete with Frigidaire automatic expansion valve and thermostatic switch. All storage compartments are rectangular to accomodate bulk or package goods. Claim is made that changeover can be accomplished in three hours time.

Represented at Exposition by: Jess King, R. N. Merritt, E. E. Rouech, B. J. Vandoren, H. A. Beck, H. E. Miller, H. A. Berkdoll, A. C. Doak, E. W. Holtson, James Irwin, R. R. Grove, W. L. Layer.

General Electric Co.

Exhibited: portable and remote type ice cream cabinets; small and large commercial condensing units for various applications in the ice cream industry; milk cooler, water cooler, splash-proof motor, switches and controls.

Condensing units exhibited were 1937 models which have the following distinguishing characteristics: models up to and including 1-hp. in size employ capacitor motors with automatic belt tightening feature. Condensers are shorter, thicker, and shrouded so as to get effect of forced-draft condenser cooling system. New-type construction features a cast base, with rest of frame pressed steel.

Demonstrated at the exhibit were the features of the G-E ice cream cabinets such as enclosed-in-steel cabinet construction, "flop-back" lids with polished hard rubber exterior surface and stainless steel inner surface; a liner of copper on the outside of which round tubing is soldered by a special process to provide maximum heat transfer.

Represented by: Clark Adams, H. T. Hulett, M. T. Bard, R. E. Remely, G. C. Harbison, G. Stafford, C. O. Hamlin, Roger Lynn, J. J. Heuther, S. W. Corbin.

Grand Rapids Cabinet Co.

Exhibited ZerOviZ low-temperature display and storage case; 8-hole and 12-hole double-row standard ice cream cabinet; 2-hole and 4-hole portable ice cream cabinets; 4-hole combination ice cream and bottled goods cabinet; 24-hole rapid dispensing counter cabinet; 6-foot dairy products display and storage case; Island type center fixture consisting of fountain, work table, ice cream, milk, and sink sections.

Represented by: E. M. Fritz, W. L. Molloy, F. R. Hoop, Tom Blackett, G. R. Lorch, J. J. Morrison, C. A. Fowler, O. H. Miller, F. C. Brautigam, W. H. Knowles, E. W. Schroeder, and A. G. Edris.

The E. A. Kaestner Co.

Exhibited stainless steel surface milk cooler; stainless steel cream pump tank; and stainless steel round vat pasteurizer.

Represented by: J. G. Kaestner, R. E. Kaestner, A. C. Kaestner, B. H. Kaestner, E. A. Kaestner, A. M. Reid, Theo. Myers, J. V. Colpitts, N. H. Hall, S. M. Conner, A. E. Greenwood, and J. V. Colpitts, Jr.

Kelvinator Corp.

Exhibited: a complete line of ice cream cabinets, refrigeration systems for trucks, bottled milk dispensing cabinet, electric farm milk cooler, and water coolers.

Kelvinator has reduced the number of models in its ice cream cabinet line this year, but without reducing the flexibility of the line for any and all types of applications. There are chest models in 2, 3, and 4-hole sizes; and portables in 4, 6, 8, and 12-hole models.

Some models featured new construction in the form of all-enamel exterior finish with rounded corners.

Represented by: Edward R. Legg, H. J. Priest, D. H. Carter, P. B. Toohey, E. R. Kelley, D. J. Bowen, A. J. Lutz, R. J. Scheu, R. N. Palm, A. P. Hawkins, H. B. Johnson, W. G. Wright.

Kerotest Mfg. Co.

Exhibited a complete line of valves and fittings for air-conditioning and refrigeration applications.

New product featured: a new type valve connecting the liquid receiver and the liquid line of a refrigerating system. This fitting is built with an

(*Concluded on Page 4, Column 1*)

OUR SEASONED MEN NOW AVERAGE $4,000.00 ANNUALLY

Our company has need for five men who have experience in merchandising to work Eastern Missouri and Southern Illinois territories. To those selected we will advance $150.00 monthly to apply against commissions. Qualifications: Age, 25 to 35; ability to sell established nationally known home appliances through our dealers; have a past record of performance; a splendid reputation; a willingness to work hard and follow instructions; and a willingness to answer this advertisement giving us all the facts concerning yourself and trust us to keep it in strictest confidence. Address reply to J. Lewis, 916 Olive St., St. Louis, Mo.

WOLVERINE
COPPER TUBING

Wolverine refrigeration tubing is made of 99.9% pure electrolytic copper, annealed to the exact specified softness in a deoxidized and dehydrated atmosphere. A clean, mirror-smooth inside surface is uniform in every coil. Meets all requirements for manufacturer and for service work.

WOLVERINE TUBE CO.
1411 CENTRAL AVENUE DETROIT, MICHIGAN

IN EVERY SALE THERE ARE TWO SALESMEN

ONE IS YOU—THE OTHER THE VOICE OF QUALITY. You—even with expert sales technique—can make sales only when your prospects feel that they are receiving high-quality refrigerators. You may quickly arouse attention, interest, and desire, but you actually close sales only when the convincing voice of quality tells your prospects that they are getting their money's worth.

The G-E monogram is recognized everywhere as a mark of high-quality electric equipment, and a G-E motor on the refrigerators you sell convinces your prospects, at a glance, that the electric equipment is superior. This assurance, coupled with the reputation of the refrigerator manufacturer, gives your prospects added conviction that your refrigerators are of high quality, and makes selling easier and hence much more profitable.

Use G-E motors on your refrigerators and amplify the sales voice of quality—make this capable assistant do more of the actual selling. General Electric, Dept. 6A-201, Schenectady, New York.

LET G-E MOTORS HELP YOU SELL

DO YOU KNOW

That G-E research has increased lamp efficiencies fivefold, and that G-E engineering has reduced lamp costs to one fifth the former cost? Such developments have helped materially to bring electricity into nine out of ten urban homes and to more than 750,000 farms. And these 22,000,000 wired homes constitute the market for your appliances.

070-158

GENERAL ELECTRIC

Developments in Commercial Refrigeration Are Outstanding at Dairy Industry's Exposition in Atlantic City

(*Concluded from Page 2, Column 5*)

extra connection which makes it possible to drain the liquid line through the pumping action of the compressor, keeping it within the system, instead of purging it to the atmosphere.

To accomplish this, the valve is adjusted so as to cut off the flow of liquid from the liquid receiver, and tubing is run from the extra connection to the suction valve of the compressor. The compressor is then put in operation and the liquid line is drained when the compressor is set in operation.

Company representatives present: K. M. Newcum, James Strachan, and W. A. Siegfried.

Kold-Hold Mfg. Co.

Exhibited: Kold-Hold refrigerated ice cream truck with Batavia body; refrigerated retail milk delivery truck; cooling unit in frozen condition; Kold-Hold accessories including make and break valve-union for connections with remote installations of refrigerating systems.

Featured: a body-by-Wendel milk delivery truck with Kold-Hold refrigeration to provide proper temperatures for milk preservation. The truck interior is so constructed with a series of metal racks that unloading is done through the front. The Kold-Hold unit is located in the top of the truck, and consists of the header and plate-type evaporator. The condensing unit which freezes the solution operates in the garage at night when the truck is out of service.

Represented by: Charles E. Ecker, W. G. Farnsworth, O. S. McGuffey, O. D. Greenlee, H. J. Burman, W. J. Edmunds, Louis Block, T. G. Lipman, W. F. Hammerling, J. C. Stevens, W. G. Winkler.

Liquid Carbonic Corp.

Exhibited 12-foot soda fountain; 120-gal. ice cream cabinet; display of Dry-Ice.

Represented by: G. Winchell, D. P. Fox, R. W. Needham, F. C. Miller, R. Skidd, R. S. Hamilton, F. L. Homer, H. J. Jones, J. J. Noonan, G. D. Vosburgh, I. R. Grossman, F. S. Davis.

Meyer Body Co., Inc.

Exhibited Meyer mechanically refrigerated ice cream motor truck body mounted to chassis.

Represented by: W. O. Meyer, L. F. Meyer, Mrs. W. O. Meyer, and Emmett Quin.

C. Nelson Mfg. Co.

Exhibited: chest and self-contained type ice cream cabinets; combination model ice cream cabinets; Fountainettes; Jumbo hardening and storage cabinets; dairy bars; Nelson condensing units.

Featured: extension of the Nelco evaporator with its holdover feature to a combination ice cream and beverage cooler cabinet. Temperature control on the higher temperature beverage cooler side is by a solenoid valve in the liquid refrigerant line, the compressor being controlled through the temperatures in the lower-temperature ice cream side.

Represented by: J. L. Nelson, C. W. Nelson, G. J. Doyle, T. P. Hogan, H. B. Hankey, J. C. Toebe, R. M. Lambeth, H. F. Beumer, J. F. Gallagher, and D. J. Dowling.

Refrigeration Appliances, Inc.

Exhibited: heavy-duty floor-type Bloefex unit cooler for cooling large milk storage room; Vertefex down draft unit cooler for small milk storage room; Standard Fanefex suspended unit cooler for average size milk storage rooms.

New feature: "lift bend" refrigerant tubing. Instead of the regular smooth curve bend, there is a "lift" the depth of the tubing before the bend is made. This serves to trap the refrigerant in each length of coil until it is completely evaporated, and is thus said to improve coil efficiency.

Represented by: H. J. Krackowizer, P. A. Karl, Henry Bretag, Viola Vest, and S. V. Swanson.

Robbins & Burke, Inc.

Exhibited mechanically refrigerated truck body mounted on chassis; Dry-Ice refrigerated truck body mounted on chassis.

Represented by: J. J. Robbins, J. E. Burke, Jr., and F. B. Lord.

Russ Soda Fountain Co.

Exhibited: Trayveyor equipped ice cream serving cabinets; dispensing units.

Featured: exclusive features of the Russ Trayveyor cabinet as follows:

Half-round refrigerant tubing, soldered against the galvanized iron cabinet liner. It is claimed that with this half-round tubing, with the liner itself in direct contact with the refrigerant, that greater evaporator efficiency is obtained, and that higher suction pressures can be used. Resistance to refrigerant flow is also said to be less.

Refrigerant is fed into this tubing from near the bottom of the cabinet. A heat interchanger is provided, as is a built-in temperature control dial.

The removable Trayveyors glide upon ball-bearing rollers and can be easily shifted from side to side, exposing the partitioned, bottom half of the cabinet which is available for storage of package goods.

Represented by: H. C. Wilmarth, L. N. Lucas, D. C. Seitz, C. D. Heiser, R. K. Merritt, and C. Q. Sherman.

Savage Arms Corp.

Exhibited: ice cream cabinets, plate assemblies for rebuilding ice cream cabinets, cold plates for truck refrigeration systems.

Featured: cabinet plate assembly "changeover." Each plate includes a plate-type evaporator, with a tank welded on one side which is filled with patented Savage freezing Jelly as the holdover medium.

One-half of the primary, low-temperature evaporator surface is exposed to the air for rapid absorption of heat from the air in the cabinet. The other half of the evaporator surface is in direct contact with the Jelly solution.

The expansion valve, three shut-off valves, and heat exchanger fit into the box or compartment which formerly housed the boiler-float valve connections. The flat top section of the old can sleeve assembly may be used as a sub-top under facing, covering the cork on the lower side of the sub-top.

The liquid refrigerant is supplied to the bottom of the Savage plates through a common header connecting all plates in the assembly. This maintains uniform liquid level in all plates. The flash gas and liquid refrigerant enter the bottom of the evaporator which, combined with the boiling of the liquid, create an active, upward agitation from bottom to top of evaporator.

A heat exchanger is provided. Small refrigerant charge is required; an 8-hole cabinet operates on 5 lbs. SO_2 or 4 lbs. methyl chloride.

Represented by: W. Vogel, L. W. Horr, W. D. Jordan, C. A. Baldwin, W. L. Wright, and F. R. Phillips.

Harold L. Schaefer, Inc.

Exhibited: Corporal ice cream dispensing cabinet; 12-hole ice cream dispensing cabinet; special ice cream cabinet, and standard ice cream cabinet.

Represented by: Harold L. Schaefer, R. B. Norris, G. E. Berres, Fred Lindblom, R. N. Schaefer, and Charles Blackmore.

Standard Body Corp.

Exhibited: 2-hole, 3-hole, and 4-hole self-contained ice cream cabinets; display cabinets, remote cabinets, and evaporator assembly.

Featured: Stanzero evaporator plate assembly available for replacement purposes in old brine type evaporator and sleeve assembly. The Stanzero plates are of "corrugated" construction, with the refrigerant flowing through the diagonal striations across the plate.

Represented by: S. Amler, C. D. Fricke, F. B. Welker, L. O. Henderson, L. Miller, William Raskin, Harry Raskin, Max Raskin, Reuben Raskin, Walter Raskin, S. Parker, S. Aviron.

York Ice Machinery Corp.

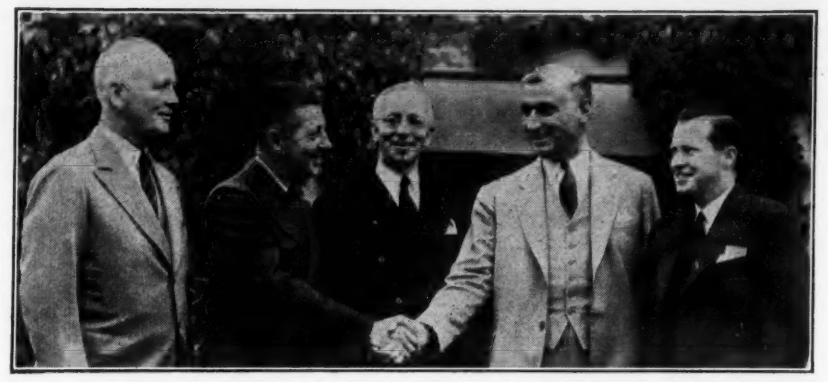
Exhibited: heat exchanger; spray pasteurizers, storage tanks, ice cream freezers, 7½x7½ ammonia compressor, ½-hp. Freon air-cooled condensing unit; and York economizer.

Featured: new construction of heat exchangers, with plates of one-piece stamped stainless steel. Natural instead of forced flow, allowing maximum heat exchange. Hydraulic plate adjuster and tightener.

The 40-qt. ice cream freezer has improvements which serve to eject the finished ice cream faster and more thoroughly, and to increase the capacity and freezing-speed times, particularly for flavored brands of ice cream.

Represented by: W. S. Shipley, S. E. Lauer, J. L. Rosenmiller, W. H. Breen, W. W. Cavanaugh, S. H. Shipley, R. V. Thomas, H. H. Erhman, C. P. Foley, F. A. Weisenbach, S. Lebari, and W. E. Zeiber.

Frigidairemen Meet on West Coast



Carl A. Copp, Frigidaire's vice president and general sales manager, greets the Pacific regional staff at the recent sales conference in Oakland, Calif. Left to right: Roger B. Hutchison, regional manager; George W. Shane, commercial sales manager; E. L. Williams, household sales manager; Mr. Copp; and C. F. Mitchell, assistant to Mr. Hutchison.

* * *

West Coast Frigidaire Distributors Confer with Factory Executives

OAKLAND, Calif.—Western distributors and district executives of Frigidaire Corp. met at Castlewood Country Club here recently in a two-day sales conference with Frigidaire factory officials.

The conference, first of its kind to be held on the Pacific coast, was under the supervision of Roger G. Hutchison, regional manager.

Present from Frigidaire Dayton headquarters were Carl A. Copp, general sales manager; W. F. Armstrong, vice president; Frank R. Pierce, manager of the household refrigeration division; Roy E. Smithson, manager of the commercial sales division; and Lee A. Clark, household advertising and sales promotion manager.

Pacific coast district executives attending the conference included T. J. McIntire, Los Angeles; R. E. Robertson, Oakland; A. L. Shellworth, Portland; C. W. Stewart, Seattle; Alvin Jensen, Spokane; and Charles C. Bintz, Salt Lake City. Members of their sales staffs also participated in the two-day sessions.

Irving Presenting Sales Course in Milwaukee

MILWAUKEE, Wis.—A series of four lectures on vital points of salesmanship is being presented by George M. Irving, sales counsellor and lecturer, for dealers and salesmen handling electrical goods here.

Presented by the Milwaukee Electric Railway & Light Co., the series is being put on through efforts of the appliance sales division of General Electric Co.

First lecture was given Oct. 16; it was titled "A Personal Inventory." Others will cover "The Pre-Interview," "Making the Sale," and "Closing the Sale." They will follow Oct. 23, Oct. 30, and Nov. 6.

Hamlin Holds Open House For Crosley Dealers

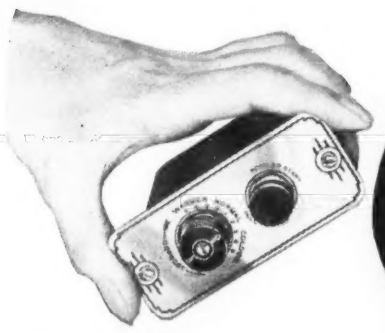
JACKSON, Mich.—In its newly opened store and display room, C. E. Hamlin Sales Co., Crosley distributor, recently held open house for dealers and salesmen. The complete line of Crosley radios, electric refrigerators, washers and ironers, Koldrinks, Coolrest bed coolers, and other products manufactured by Crosley Radio Corp. was shown.

Bucher Made Westinghouse Executive Vice President

PITTSBURGH—George H. Bucher, president and general manager of Westinghouse Electric International Co., has been elected executive vice president of Westinghouse Electric & Mfg. Co., with headquarters here.

Mr. Bucher has been connected with the Westinghouse organization since Sept. 1, 1909, when he joined the company as a graduate student. In 1911 he was transferred to the Westinghouse export department in New York City.

In 1920 he was appointed assistant to the general manager of Westinghouse Electric International Co., and a year later was made assistant general manager, a position which he held until 1932. In that year he was elected vice president and general manager, and, two years later, was named president and general manager of the company. He was elected a vice president of Westinghouse Electric & Mfg. Co. in 1935.



CUTLER-HAMMER REFRIGERATION CONTROL

For Replacement Service

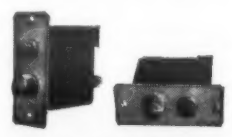
The dependable C-H Refrigerator Control is now available as a replacement unit. Same control used on popular-make Refrigerators . . . proved by time and service . . . manufactured by the Pioneer Control Company with 50 years of experience.

Easy to install, has the features which bring large-volume replacement business. Keep four models on hand and you are ready for 99% of all domestic calls. Each model mounts horizontally or vertically, fits large or small evaporator-shield openings. Simple connections get job done in a hurry.

NEW MODERN FEATURES. Differential adjustment screw gives whatever cut-in and cut-out temperatures or pressures are wanted; cold-control knob adjusts temperature or pressure range; defrost position; full overload protection to motor, resetting from self-indicating start-stop button. Handsome modern indicator plate in shiny chromium and black.

See your jobber at once. Send for complete new catalog describing this modern replacement control. Also replacement control for beverage coolers, ice cream cabinets and commercial service. Send for the catalog today. CUTLER-HAMMER, Inc., *Pioneer Manufacturers of Electric Control Apparatus*, 1362 St. Paul Avenue, Milwaukee, Wisconsin.

4 models meet 99% of all domestic calls. Temperature type in 24" and 48" tubes. Pressure type for sulphur dioxide and methyl chloride systems.



Mounts Horizontally or Vertically. Installs easily.

FOR BEVERAGE COOLERS AND ICE CREAM CABINETS

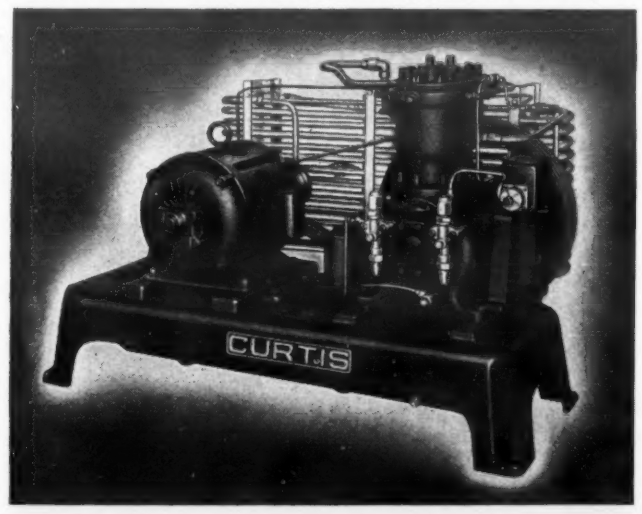
C-H Replacement Control for commercial use offers same big advantages as domestic controls. See catalog for full description.

CUTLER-HAMMER
REFRIGERATION CONTROL FOR REPLACEMENT SERVICE

Why we say "CONSULT YOUR LOCAL CURTIS REPRESENTATIVE"—

● In every current Curtis advertisement to users of Curtis refrigeration and air conditioning equipment you will find the phrase "Consult Your Local Curtis Representative."

For Curtis sells only through its appointed representatives, not through any other outlet nor direct.



Such advertising is just one example of the way this company is working to increase its dealers' sales and profits. It will pay you to investigate the Curtis merchandising plan of dealer co-operation. Write today.

CURTIS

CURTIS REFRIGERATING MACHINE COMPANY
Division of Curtis Manufacturing Company • • 1912 Kienlen Avenue, Saint Louis, U. S. A.

Westinghouse Gets U. S. Housing Order For 16,697 Units

(*Concluded from Page 1, Column 5*)

penalty if the kilowatt-hour consumption, when tested by the government, exceeds the guaranteed kilowatt-hour consumption submitted by the manufacturer in his bid.

Refrigerators to be delivered under the contract will be 1937 models, with a net storage capacity of 4 cu. ft. and with exterior finish in Dulux.

Delivery of the 16,697 refrigerators will be made between Dec. 1 of this year and Oct. 1, 1937. Largest number to be delivered to any single project is 1,545 units, which will go to the Ten Eyck Houses, New York City. This delivery is scheduled for Aug. 1, 1937.

Operating Cost Figured on Current At One Cent Per Kwh.

The "evaluated" bid, which determined the low bidder on the contract, was obtained by dividing the total of 16,697 refrigerators into the total bid price, to obtain the unit price. To this price was then added the guaranteed kwh. consumption per 24 hours, multiplied by $36.50, the estimated cost of current for 10 years at 1 cent per kwh.

To obtain the guaranteed operating cost, manufacturers were required to test their refrigerators for both "no load" and "load" performance in two rooms, one with a temperature of 90° F., and the other with a temperature of 110° F.

In the "no load" test, with the cabinet empty, units were required to maintain an average cabinet temperature for 24 hours of 43° F. or less, when the temperature of the room was 90° F. In the room in which the temperature was 110° F., the units were required to hold an average cabinet temperature of not more than 48° F.

Maximum kwh. consumption in this test was set by the government at 1.3 kwh. per 24 hours, in the 90° room, and 2.3 kwh. in the test room where the temperature was 110° F.

In the "load performance" test, in which the control was adjusted to give the cabinet a 25-watt heat load, the units were required to maintain an average cabinet temperature of 45° F. for 24 hours, with the room temperature at 90° F. In the 110° room, the units were required to hold an average temperature of 50° F. inside the food compartment.

No maximum kwh. consumption requirement for the 24-hour period was set by the government in this test.

Westinghouse Test Shows Unit Will Operate on 1.32 Kwh. Per Day

Westinghouse submitted a unit price bid of $67.63, fifth high among the eight companies bidding on the projects. However, the company's operating cost guarantee, based on the average kwh. consumption of the units in the four performance tests, was 1.32 kwh. per 24 hours, a 10-year cost of $48.18 for current, at the rate of 1 cent per kwh.

These two figures, combined, gave Westinghouse an evaluated price of $115.81 per unit, the lowest submitted on the contract.

To check the guaranteed performance of the refrigerators after the contract is awarded, the government has the privilege of selecting from four to six refrigerators from stock, for tests to be made according to the specifications under which the bids were received.

Penalty If Cost Exceeds Manufacturer's Guarantee

"If the kwh. consumption as determined in these tests exceeds the guaranteed kwh. consumption as given in the bid," the specifications read, "the Contractor shall be liable for the difference in dollars between the guarantee and the actual kwh. consumption shown on these tests, evaluated over a 10-year period at a rate of 1 cent per kwh."

First deliveries under the contract, amounting to 1,173 units, are scheduled to be made on Dec. 1 of this year. Six hundred fifty-four of the refrigerators are to be delivered to the Cedar-Central Apartments project, Cleveland, and 519 units to the Parklawn project, Milwaukee.

Deliveries to three more projects, totaling 1,477 units will be made about Jan. 1, 1937. Two hundred seventy-eight of the refrigerators will be used on the Stanley S. Holmes project, Atlantic City; 579 on the Outhwaite Homes, and 620 on the Lakeview Terrace projects, both in Cleveland.

Other projects calling for a large number of refrigerators, in addition to the Ten Eyck Houses, are the Old Harbor Village, Boston, on which 1,022 units will be used; the Laurel Homes, Cincinnati, using 916 units; and the Julia C. Lathrop Homes, Chicago, where 894 units will be required.

116 Refrigerators Sold by Utility Employes In Territory of 1,564 Electric Meters

AVOCA, Iowa—Organization, loyalty, ability, and hard work proved a winning combination for the 26 employes of this tiny Iowa-Nebraska Power Co. district, who captured all company honors by selling 116 refrigerators during the three-month sales campaign staged this year by the utility.

Nearing their all-time company record of two years ago, this district, under the inspired leadership of District Manager A. C. Bennett and Sales Supervisor Howard Bowen, unearthed a total of 268 prospects during the campaign, although there were only 1,564 residential electric meters in the entire territory.

Splendid energy, enthusiasm, and determination were displayed by every worker in the district as they cooperated with each other to the fullest extent, according to Mr. Bennett. Only two employes failed to turn in prospects resulting in sales.

Rules of the contest were simple:

New prospects were kept in an open file available to all employes. Employes were protected on prospects for a maximum of two weeks at a time. Prospect files were checked bi-weekly. If the prospect had not been contacted within that time, it became the property of the first employe requesting it, providing that employe made the necessary follow-up call.

At the start of the campaign there were 96 prospects on hand in the sales department. It was decided at an employes' meeting that these prospects should be placed in a closed file, available only to the salesmen. Prospects turned in by employes could then be easily separated from the others and maintained as an individual group.

Enthusiasm was kept at high pitch through bi-weekly sales meetings at which every prospect in the files was discussed in open session, while employes contributed any possible information or suggestions.

All but the really "hot" prospects were dropped during the intense concentration of the last week's campaigning. The active prospects which remained were then pushed in every way possible. All employes studied these prospects and offered suggestions or information, regardless of who was making the sale.

Giving full credit to those who worked under him, Mr. Bennett said, "To carry out these plans needed the 100% support of all Avoca employes, and this support was given wholeheartedly. Every employe, to my knowledge, forgot time, day, and all personal pleasures to keep up momentum on this campaign. And that is the reason we accomplished what we did, for without this cooperation we could not possibly have carried out our plans."

Betts & Kauffman Form Sparton Distributorship

PITTSBURGH — Ny-Penn-O Distributing Co., recently organized by C. R. Betts and C. J. Kauffman, both of whom have been associated with the electric appliance field in western Pennsylvania for a number of years, will operate with offices in Pittsburgh, Erie, and Warren, Pa.

The firm will act as distributor for Sparton radios and refrigerators throughout 11 counties in northwestern Pennsylvania, and will handle American Beauty washers and smaller appliances in all of western Pennsylvania, eastern Ohio, and southwestern New York state.

New Firm Enters Field In Little Rock, Ark.

LITTLE ROCK, Ark.—Little Rock Refrigeration Co., handling domestic and commercial refrigeration, radio, washers, and other appliances, recently opened for business here. O. D. Cauby is president, and H. Cumnock secretary and treasurer.

Distributor's Sales Total $46,771 in One Day

SCHENECTADY—Passing 200% of the quota set for Merriam day, the sales force of the A. Wayne Merriam, Inc., General Electric distributor here, sold $46,771.39 worth of General Electric kitchen, laundry, and commercial equipment on Sept. 29. Dealers all over the state took part in the drive.

Model 210, designed for commercial applications; furnished with flared nuts . . . Complete range of models . . . 1 to 15 tons FREON.

Rugged, leak-proof construction, instantaneous response, supersensitivity and correct modulation are just a few of the features that have made the A-P line of expansion valves the outstanding leader in the field. Remember, A-P Thermostatic Expansion Valves may be installed in any position, or in any temperature, even though higher or lower than the bulb.

Progressive Jobbers everywhere stock A-P Controls.

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Send full information about A-P Expansion Valves.

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ADDRESS .....

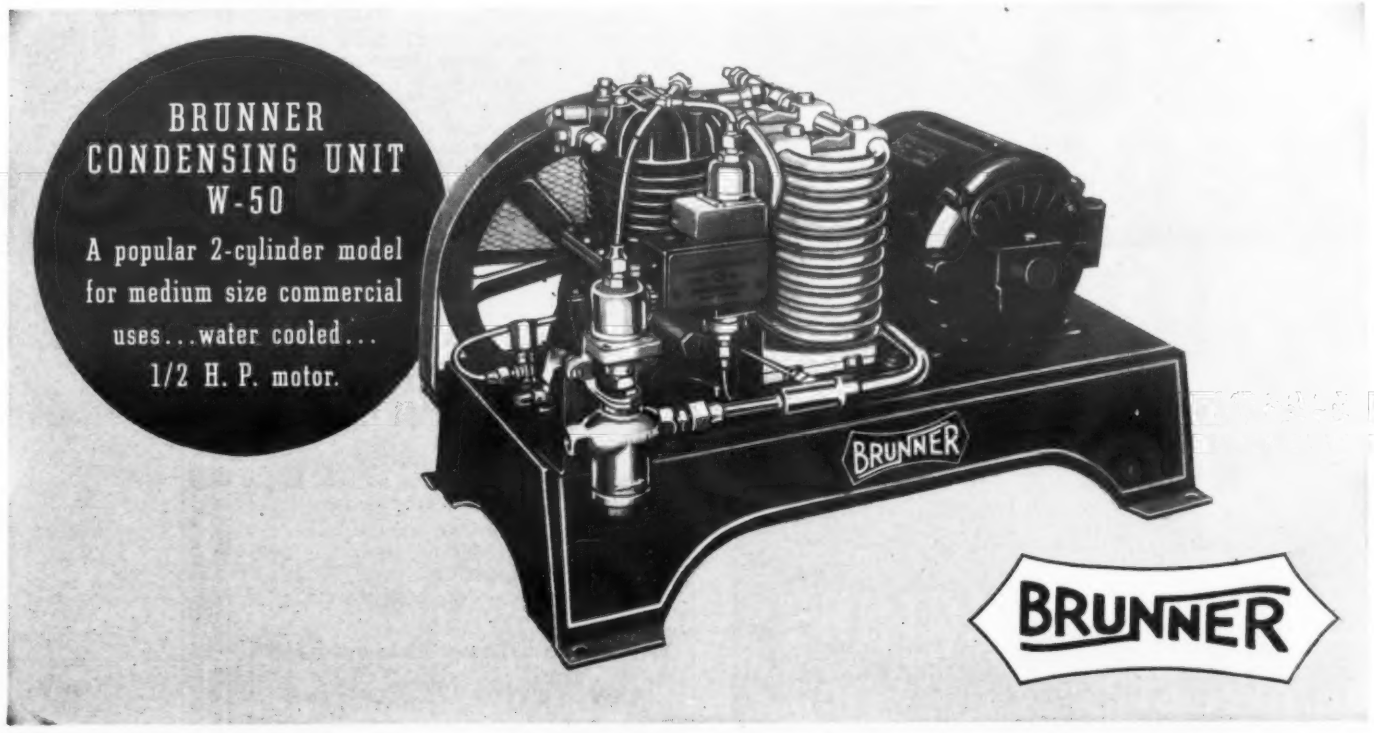
TOWN ..... STATE .....

HERE'S THE SENSE OF *Oversize* CONDENSERS

Actually, the condensers on Brunner Refrigeration and Air Conditioning Units are oversize only in comparison with other types of construction. For, according to Brunner engineering experience, extra large condensers are an essential factor in obtaining that high refrigerating efficiency Brunner units are famous for. On Brunner water cooled units, the condensers are equipped with streamlined fittings, while on Brunner air cooled units, the condensers are so shrouded that the fan guard also acts as an air control, effectively directing the air flow and further enhancing the overall efficiency. Study through Brunner features one by one: get acquainted with Brunner's complete construction, designed throughout for heavy duty service. Forty-seven condensing units, five compressor models; air and water cooled; in a range from 1/4 H.P. to 15 H.P. Write for illustrated catalog.

BRUNNER MANUFACTURING CO. ★ ★ ★ UTICA, N. Y., U. S. A.

WEST COAST BRANCH OFFICE AND WAREHOUSE: 1501-09 WEST 8TH STREET, LOS ANGELES, CALIF.



BRUNNER CONDENSING UNITS and COMPRESSORS

Seventeen Crosley Sales Leaders Win New Chevrolets

CINCINNATI—Seventeen star Crosley salesmen, winners in a recent $60,000 Shelvador refrigerator sales contest sponsored by Crosley Radio Corp., each were presented with a new Chevrolet automobile as a reward for their efforts.

Presentation was made Oct. 1, at the WLW transmitter at Mason, Ohio, by Thomas W. Berger, Crosley's general sales manager.

Other Crosley officials present included Lewis M. Crosley, vice president and general manager; Powel Crosley, III, vice president: Neil Bauer, assistant sales manager; and Glenn H. Corbett, advertising manager.

Sixty-eight Crosley Shelvadors, 102 Crosley radios, and 153 Bulova watches were also awarded to contest participants.

Names of the contest winners, and the dealers under whom they work, follow: John Schaffer, Sisson Bros. Welden Co., Binghamton, N. Y.; W. J. Probst, Auto Lec Stores, New Orleans; Lew Block, General Supply Co., Hackensack, N. J.; Dennis L. Slayback, S. & S. Appliance Co., Glendale, Calif.; Gerald H. Weinrich, Radio Sales & Service Co., Akron, Ohio.

J. P. Rosaeur, Parkwater Mercantile Co., Parkwater, Wash.; Herbert D. Frank, May Stern Co., Cincinatti; A. L. Finger, Finger Radio & Furniture Co., Houston, Tex.; D. A. Gathmann, Gathmann Sales Co., Jackson, Mich.; G. J. Warbis, Palais Royal Dept. Store, Washington, D. C.

C. B. Grime, Grimes Radio Shop, Muncie, Ind.; Si Brown, Fredman Bros., Peoria, Ill.; Barney W. Paull, Credit Tire & Sales Co., Duluth, Minn.; Joseph Hirsch, New England Furniture Store, Lewiston, Me.; Sam Baskin, Raffers, Inc., Brooklyn; Henry Chas. Hodeck, Your Own Radio Store, Chicago; and C. F. Sohmer, C. F. Sohmer Co., Lock Haven, Pa.

Baltimore Distributor Builds All-Norge Home

BALTIMORE — First completely Norge-equipped home built here is the colonial-type residence of Nathan Ullman, vice president of Joseph M. Zamoiski Co., local Norge distributor.

Located at 2220 Park Ave., the house contains a Norge Fine Air unit for heating and air conditioning, and Norge kitchen equipment, including refrigerator and range.

Gibson Gets U. S. Order For 1800 Units

GREENVILLE, Mich.—Gibson Electric Refrigerator Corp. recently received an order for 1,800 refrigerators from the Quartermaster's Department of the U. S. Government, company officials state.

Most of these machines will be used on various army posts.

Smithsonian Gets Bust of Lord Kelvin

Principals in the presentation of a bronze bust of Lord Kelvin to the Smithsonian Institution by the English-Speaking Union. Left to right: V. A. L. Mallet, counselor of the British Embassy; Dr. C. G. Abbot, secretary of the Smithsonian; Alanson B. Houghton, president of the English-Speaking Union's Washington branch; and President George W. Mason of Kelvinator Corp., donor of the bust.

* * *

Mason Presents Bust Of Scientist to Institute

WASHINGTON, D. C.—A bronze bust of Lord Kelvin of Largs, 19th century British physicist known as the "father of modern refrigeration and air conditioning," was formally presented to the Smithsonian Institute by officials of the English-Speaking Union at a luncheon at the Willard Hotel here Oct. 8.

The gift was donated by George W. Mason, president of Kelvinator Corp., who was among the guests at the luncheon given to honor the scientist whose name is connected with the kelvin, a commercial unit of electricity; Kelvin's law for measuring the most economical diameter of an electric wire; and the Kelvin, or Absolute, temperature scale.

V. A. L. Mallet, C. M. G., Counsellor of the British Embassy, presented the bust to Dr. C. G. Abbot, secretary of the Smithsonian Institute. Alanson B. Houghton, former American Ambassador to the Court of St. James, presided at the ceremony as president of the Washington branch of the Union's American organization.

Dr. W. F. G. Swann, internationally known physicist and director of the Bartol Research Foundation of the Franklin Institute, spoke upon the scientific achievements of Lord Kelvin. A paper offering tribute to Kelvin was read by Prof. A. H. Compton of the University of Chicago, a Nobel Prize winner in the field of physics.

The bust was the first ever cast from the plaster original by the eminent English artist, Herbert Hampton.

Among those who attended the ceremonies were Dr. H. C. Byrd, president, University of Maryland; Lyman J. Briggs, director, National Bureau of Standards; Dr. Frederick B. Robinson, president, College of the City of New York; John K. Roosevelt, vice president, All America Cables, Inc.; Dr. F. E. Wright, home secretary, National Academy of Sciences; Willis R. Gregg, chief of the U. S. Weather Bureau; Dr. Parke R. Kolbe, president of Drexel Institute; and Dr. Paul A. McNally, S. J., director of the observatory at Georgetown College.

Reber Says Salesmen, Not Consumers, Need Winter Education

DENVER—Educating salesmen, not consumers, is the key to mid-winter sales of electric refrigeration, in the opinion of Louis L. Reber, assistant buyer for the May Co. home furnishings department here. The department last year had a full-time sales force on winter refrigeration promotion for the first time.

"We found that our sales personnel must first be sold on the idea of selling refrigerators in the winter," Mr. Reber declared.

"The consumer is educated to year around use of refrigeration. Our salesmen were far behind consumers in this respect. To supplant this deficiency, our daily sales meeting was turned into a class on 'selling the salesman.'

"Our greatest problem was overcoming the idea that refrigeration is a seasonable appliance. When the salesmen lost this old conception they surprised themselves in the number of successful sales they were able to make. Our mid-winter sales have increased as a result."

Supplementary to this educational program, and of almost equal importance, according to Mr. Reber, was the setting up of a permanent refrigeration sales force. This sales force devoted its entire time to selling electric refrigerators.

The older type of sales plan-selling refrigerators in spring and summer, and turning sales efforts to home furnishing appliances in the fall and winter—was discarded by the department store. This plan, Mr. Reber believes, has two evils that destroyed the store's chance of building up mid-winter refrigeration sales.

First of these was that sales pressure was released at the time when it was needed most. Directing the salesmen to concentrate their efforts on more seasonable items during the winter months served also to destroy their enthusiasm for selling refrigeration, Mr. Reber believes. Consequently in the spring, the salesmen had to reorganize their merchandising plans and thus lost much valuable time.

Mr. Reber has checked three results from the company's new plan, which he sums up as follows:

1. Salesmen, in order to make a living, are compelled to sell refrigerators throughout the entire year, because they are working on only one product.

2. No time is lost in setting up new merchandising plans each season, and in regenerating sales enthusiasm.

3. New and better merchandising plans are worked out because the salesmen concentrate their entire efforts on the sale of refrigerators.

Standard Stove Brings Out New Water Heater Line

TOLEDO—Standard Electric Stove Co. has brought out a new series of water heaters, ranging in size from 6 to 120-gallon capacity.

The units are constructed in modernistic design, with low bases, permitting the installation of the larger models in low basements. The units may be had with either switch or outside control. An extra charge is made when both are ordered.

395 Million Dollars Spent in Property Modernization

WASHINGTON—Some $395,882,687 of private capital has been invested in the rehabilitation of privately owned property under a guarantee against loss of the Federal Housing Administration from August, 1934 through June, 1936, according to an analysis of the insured loans just completed by the Administration. This involved 1,086,423 loans.

Residential properties accounted for 917,331 loans for a total of $278,212,038.

Of this, single family residential property loans insured by the FHA were 708,403 with a total value of $211,180,696. Multiple residential units obtained 208,928 loans for a total value of $67,031,342.

The average loan is $364.39. The figures involve all loans made by private banking and lending agencies and insured under the terms of title I of the National Housing Act from the period when it began to function last June.

Retail stores and service trades loans number 80,163 at a total of $55,719,417. Retail stores represent the largest group of borrowers in this classification, accounting for 28,553 loans for a value of $24,089,487.

Classification of the improvements for which loans were expended show that 45.2% of the total, or $178,914,342, went for the purchase and installation of equipment and machinery, while 54.8%, or $216,968,345, went for structural alterations and repairs.

The type of property improved and the number of loans and the dollar volume in each of eight classifications is as follows:

Single family residential—708,403 loans, value $211,180,696; multiple residential—208,928 loans, $67,031,342; retail store and service trades—80,163 loans, $55,719,417; commercial other than retail—14,431 loans, $16,621,644; farm property—39,943 loans, $14,930,297; industrial—6,529 loans, $14,859,074; institutional—4,224 loans, $3,351,139; unclassified property—23,802 loans,

Invisible Kitchen Adds Compact Model to Line

CHICAGO—Addition of a new model S-S-6-0 Deluxe Special to its line has been announced by Electric Invisible Kitchen Co. here.

Compact in size, the model is 57 in. long, 23 in. deep, and 37½ in. from floor to stainless steel work surface. The unit is equipped with electric stove, oven, electric refrigerator, sink and plumbing, and In-a-Dor removable serving table, with wall storage cabinets. Finish on the standard job is in ebony and chrome exterior, with an ivory interior.

Twelve models now comprise the complete line of the Electric Invisible Kitchen Co. New promotion material issued by the company has been designed to sell its products to hotel managements interested in securing and maintaining permanent guests.

Displays in Grocery Stores Boost Sales For R. L. Moore

ALBANY, Ga.—A cooperative display of electric refrigerators and appliances, placed in local grocery stores, enabled R. L. Moore, refrigerator dealer in this city, to increase his business volume $500 during a one-month promotion.

Seven of the leading local grocery merchants entered the promotion. The dealer placed one of his highest priced refrigerators in each grocery store. Doors of the refrigerator were left open so that the customer could see the food-stocked interior.

Ranges and other appliances were rowed next to the refrigerator. Each appliance had a price tag on its top, and a card explaining the cooperative plan. More than $1,000 worth of appliances were shown at each grocery store.

The plan worked in this manner: a family buying $50 worth of groceries in a month could purchase any of the appliances on display, using terms in which a fifth of the cash price was deduced. For the family purchasing $25 worth of groceries, a reduction of one-tenth of the list price was made.

Instalment payment plans included in the campaign permitted the customer who purchased a box with a list price of $100 or more, to make a $10 down payment, take home the refrigerator, and pay $15 during the next 40 days.

Discount coupons were issued to grocery store customers. The customer's name was written on the back of the coupon by the merchant. This feature, the stocked floor models, and the publicity, made the promotion beneficial to the grocerers.

The cooperative plan was announced in a special six-page rotogravure spread in the Albany daily newspaper, two weeks before the promotion started. The pages contained dealer advertisements, and features showing the conveniences of the appliances offered.

G-E Sales Promotion to Be Decentralized

BRIDGEPORT, Conn. — Decentralization of General Electric's appliance sales promotion activities, in accordance with a policy recently adopted, has been announced by the company's appliance and merchandise department.

J. W. McIver, for several years manager of appliance promotion, has resigned to join Maxon, Inc., advertising agency, and the duties formerly assigned to him have been apportioned among the appliance division of the Bridgeport organization.

Promotional functions are now in charge of W. D. Yates, for composite promotion and exhibits; G. H. Libbey, for G-E Hotpoint heating devices and sunlamps; C. T. Wandres, for radio; J. K. Kay, for home laundry equipment; W. E. Sawyer, for electric cleaners; E. A. Macaulay, for fans; and D. B. Hollister, for clocks.

Backed by—
30 YEARS
OF ELECTRICAL MANUFACTURE!
SQUARE D REGULATORS
for Commercial Refrigeration
SQUARE D EVERYWHERE
SQUARE D COMPANY
REGULATOR DIVISION, DETROIT, MICHIGAN
WESTERN DIVISION, LOS ANGELES, CALIFORNIA
SQUARE D COMPANY, CANADA LTD., TORONTO, ONTARIO
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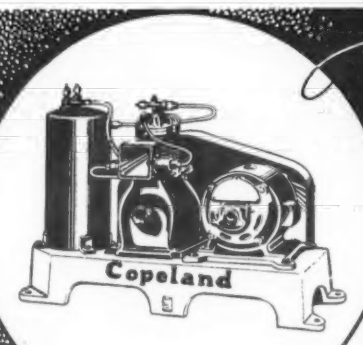

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Superior PERFORMANCE of every COPELAND
● TO merely state that every Copeland unit is precision-built hardly does justice to the manufacturing methods employed in the Copeland plant. To completely appreciate just why a Copeland performs so smoothly and economically one should spend considerable time watching these superior units being built. Copeland makes use of scientific machinery, gauges and testing apparatus that assure and maintain precision-manufacturing standards known to be the highest in this industry. Copeland performance has become a Copeland tradition. Investigate this fine line—and sell it. A few territories are available.
COPELAND REFRIGERATION CORPORATION
Manufacturers of a complete line of Household and Commercial Refrigeration
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Copeland
DEPENDABLE Electric REFRIGERATION

Orkil Co. Holds Sales Promotion Meeting For 200 Dealers

HARTFORD, Conn.—Orkil Electric Co., Inc., formerly Modern Home Utilities, Inc., Connecticut distributor of General Electric appliances, held a recent state-wide dealer meeting attended by more than 200 company representatives, to discuss and stimulate fall sales activity.

In addition to company employes, representatives were present from General Electric Co., Conn. Light & Power Co., and City of Norwich Gas & Electric Department.

Over $1,000 in prizes were awarded by O. P. Kilbourn, president of the distributorship, to dealers and salesmen for their efforts in the summer sales drive. High dealer was the Meriden district of Connecticut Light & Power. Leading salesman was Gustave W. Zurcher, Hartford branch of Orkil Electric.

Mr. Kilbourn revealed that G-E refrigerator and appliance sales had increased over 40% so far this year in territory served by his company.

To satisfy a rapidly-growing demand for kitchen modernization, Mr. Kilbourn announced the creation of a Kitchen Planning Bureau under the direction of Gordon MacMaster. Information and services of the Bureau will be available to home owners and architects throughout the state.

Mr. Kilbourn also announced appointment of Eugene Hennessy, former retailer supervisor of New Haven and Waterbury branches, to the newly-created post of manager of retail branches.

20-Page Advertisement Announces Opening of Krich-Radisco Building

NEWARK—The merits of electric refrigeration and air conditioning predominated a special 20-page advertising section of a local newspaper which proclaimed the opening Sept. 10 of the new building of Krich-Radisco, Inc., Kelvinator distributor in this territory.

News items in the section concerned the firm and the products it handles, and advertisements by the company and members of its dealer organization.

Articles were written for the section by George W. Mason, president of Kelvinator Corp., and Max H. Krich, president of the distributing company.

Present at the formal opening of the new headquarters were Mayor Ellenstein of Newark, other officials, members of the judiciary, executives of several refrigerator, radio, and appliance manufacturing companies, and dealers from all over the Krich-Radisco territory.

The new building is a two-story structure, of day-light construction, and air conditioned throughout. Showrooms are on the first floor, an auditorium on the second. At the rear of the building, covering almost an acre of ground, ist the storage warehouse, and shipping and receiving departments.

Auditorium contains a Kelvinator model kitchen, to be used for cooking school purposes; a revolving stage is an added feature. The auditorium, intended for use by dealers, is available to charitable organizations without charge.

Frankelite Establishes Branch in Akron

CLEVELAND—The Frankelite Co., Crosley distributor here for the past six years, has opened a branch in Akron, Ohio, Frankelite Sales Manager E. J. Rueth announced recently. The Akron office will be in charge of Carl Kromer, who has sold Crosley products in Akron for several years.

The new branch store has opened a centrally located warehouse and service department.

Mr. Rueth reports that sales for his company have increased perceptibly over those for 1935.

Morris to Handle Grunow In Central N. Y. State

BINGHAMTON, N. Y.—Morris Distributing Co., Inc., here, recently was appointed Grunow wholesaler in central and southern New York state by General Household Utilities Co., Chicago.

Maurice Horowitch, president of Morris Distributing Co., announced that Lou Shiffner has been added to the sales force and will cover the Scranton and Wilkes-Barre territory.

A warehouse and service department will be opened soon in the anthracite region.

Brooklyn Edison Builds All-Electric, Conditioned Demonstration Home in Showroom

BROOKLYN—Brooklyn Edison Co. recently completed erection of an all-electric two-story 10-room home known as the "Edison Wonder House," in its showroom at 380 Pearl Street.

The showroom has been completely reconstructed, and contains in addition to the "Wonder House," a small auditorium, model shop, a group of modern illuminated store fronts and show windows, and a number of miniature exhibits illustrating various facts about light and sight.

Leading Brooklyn stores will alternate in conducting the model shop, and local merchants will use the show windows for display purposes.

The house was built with the cooperation of more than 100 firms—manufacturers, distributors, and retailers of building materials, electrical equipment and furnishings—as a practical effort to develop new business by showing in an actual home setting the many modern domestic applications of electricity.

The home will be equipped with every practical device now available for promoting health, comfort, or convenience in the home, it is said.

The house is air conditioned, and contains all the standard electric appliances including refrigerator, range, washer, and ironer. The kitchen is equipped with a dishwasher and garbage disposal equipment built into the sink.

An automatic door between the kitchen and the dining room opens when approached without being touched, a window opener and closer in the master bedroom is operated by a button near the bed, and an electric eye in the nursery sounds an alarm when its beam is intercepted by anyone crossing the floor.

Lighting is a major feature in the home, and is designed not only for utility but also for decorative purposes. Novel applications of light begin in the garden, where spotlights and waterproof lamps are concealed under artificial lily pads to illuminate the pool.

The entrance has side and overhead panel lighting, the latter controlled by an electric doormat. A small spotlight focussed on the keyhole, and a tiny light in the knocker, are alternative methods of providing subdued illumination for the late comer at the door.

The "Wonder House" and its companion exhibits are open to visitors from 9 to 5 on weekdays and from 9 to 1 on Saturdays. Special scheduled groups are taken through in the evenings.

Guests are conducted through the house by specially trained hostesses, who explain and demonstrate the equipment.

Lebet Tops Universal Cooler's Golfers

DETROIT—Final round of Universal Cooler Corp.'s annual golf tournament was played Sept. 20 at Warren Valley Golf Club. Engineer Sam Lebet, runner-up in last year's competition, defeated Oliver Kesti, order department, 8 and 7, to become new champion and temporary possessor of the Universal Cooler trophy.

The 16 qualifiers were chosen for the play-offs from an Employe's Club tournament held on the same course. Those competing in the play-offs, besides Lebet and Kesti, were: Devlin, Bigham, McGhie, Allen, Goldsmith, Smith, Nelson, Stewart, Southworth, Ribor, Brozowski, Ferndon, White, and Neilsen.

3rd Quarter G-E Sales Up 38% Over 1935

NEW YORK CITY—Orders received by General Electric Co. during the third quarter of 1936 amounted to $74,922,441, compared with $54,400,819 during the third quarter of 1935, an increase of 38%, announces President Gerard Swope.

Orders received during the nine months amounted to $211,891,038, compared with $158,943,765 during the nine months last year, an increase of 33%.

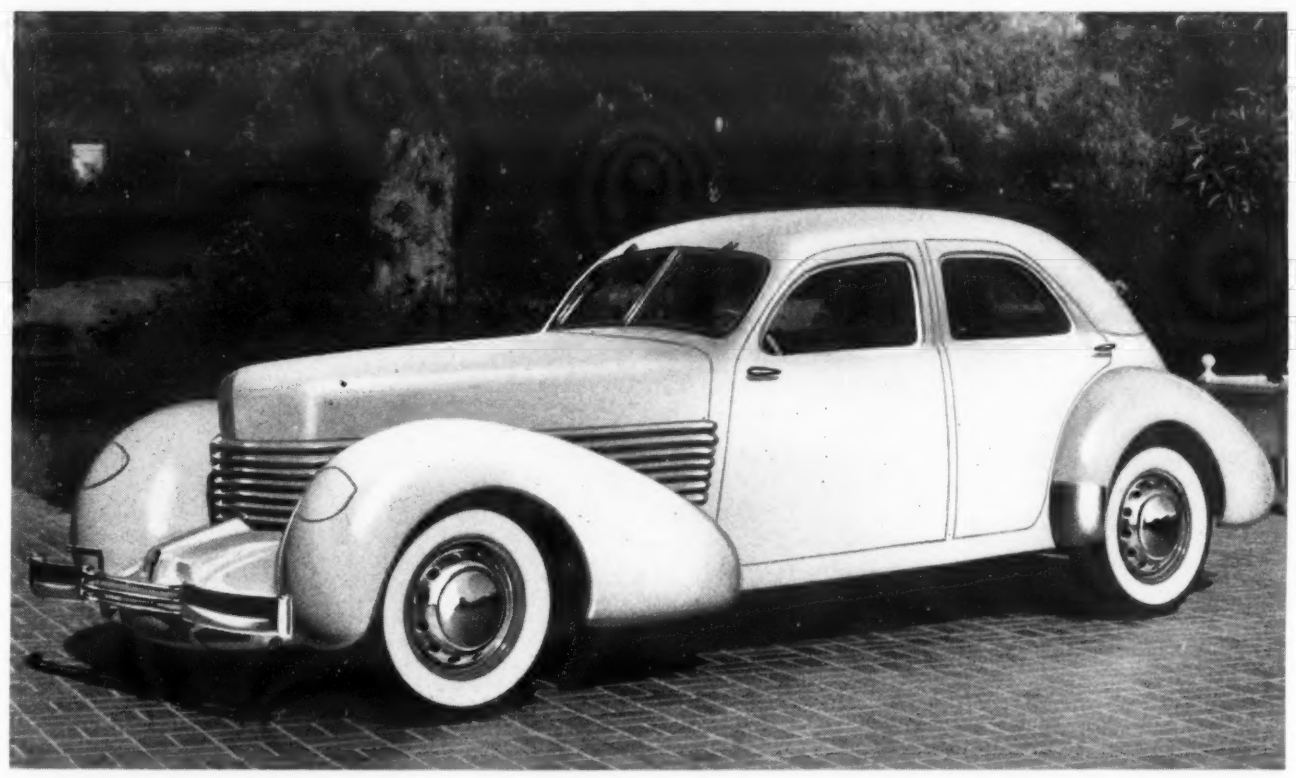
Orders received during the third quarter and first nine months of this year were larger than for any respective period since 1930, Mr. Swope said.

EH & FA Will Finance Sales for Indiana Utility

FORT WAYNE, Ind. — Electric Home and Farm Authority will cooperate with Indiana Service Corp., local utility, in financing sale of electric appliances to the utility's consumers.

This fact was disclosed recently when EH & FA announced closing of a contract between the two organizations.

QUALITY IN EVERY DETAIL



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Amusement Boom Concerns Dealers

AT FIRST glance, the current boom in commercialized amusements might seem like encouraging news to electrical appliance dealers. There is no doubt that money is being spent.

To see almost any movie in the larger theaters of metropolitan areas means a long wait in line. Double features — a depression measure—are disappearing from the neighborhood houses. The legitimate stage is coming back with a bang, especially in the "provinces." Even vaudeville, once buried with solemn rites, seems to be resuscitating. Night clubs are jammed; new ones, lavish and modernistic, are being erected.

All this sounds like the return of good times. But whether or not it means increased sales of refrigeration equipment is another question. True, the new night clubs and theater restaurants which are springing up mean juicy quids of business for commercial installations and air conditioning. But household refrigerators, radios, and home appliances may even be adversely affected by the current wave of showgoing.

Throughout the depression the sale of household refrigerators and radios profited from the return to family life and home joys which reduced incomes and budgets made necessary.

Not having the money to go out for dinner and a show, people stayed home more, listened to the radio, revived the good old custom of visiting the neighbors of an evening. Manufacturers of playing cards, and publishers of books on bridge, enjoyed increased business. Radio advertising increased by leaps and bounds.

Because they ate at home more, and because they entertained friends in the home, a household refrigerator which could be depended on, one which made a bountiful supply of ice cubes, and had room for midnight snacks, became a necessity.

Moreover, it was a source of pride, something to show the friends when they dropped in; and a haven for the men, whither they could retreat for a cold bottle of beer whilst the womenfolk desiccated reputations or traded tales on the idiosyncracies of husbands.

America, always a nation "on the go," a land of inveterate "steppers," now seems to be indulging long-pent-up desires to "go places and do things."

That means, of course, fewer family circle evenings, fewer quiet bridge games with the neighbors, fewer fireside chats. It means that one of the urges to purchase an electric refrigerator will be lessened in strength, and that a new approach to the problem of selling, new arguments—or emphasis on different arguments, and possibly a revised sales technique, are all indicated.

Just what sales arguments will prove to have the most appeal under these altered circumstances remain to be seen, of course. But it seems likely that arguments in the "practical" category, as differentiated from those related to pride of possession, should carry the most weight. Time-saving conveniences, gadgets which help the housewife get out of the kitchen in time to catch the first show, may have more appeal than ever before.

The old stories of quantity purchases, of storing food obtained at week-end sales, can be brought out of the moth balls, dusted off, and presented in new guise. This time, instead of being presented as small economies attuned to the depression, the quantity purchase idea might be offered as a time-saver, inasmuch as the number of trips to market can thereby be reduced. Hence, more time for joy rides in the new family automobile.

Still another aspect of this wave of renewed interest in outside amusements which sales promotion men should consider is that free shows may not be such drawing cards as they have been during the past few years.

When money was scarce, a free show—anything from a cooking school to a commercial movie—pulled crowds of women from their homes. Today, with more pocket money, the housewives are much more likely to go see Robert Taylor in his latest heart-stimulator than they are to watch a show which has a gleaming kitchen for the setting.

Moreover, some of the large sums formerly spent on radio advertising may now be diverted to newspapers and magazines.

Social trends are of high significance and great importance to those engaged in selling products to the home. And this renewed craze for shows, which has just gotten under way (and, therefore, may not have penetrated the consciousness of many sales directors as yet), calls for careful consideration of present selling and promotion programs, with subsequent revision of the sales technique.

Letters

A Renewal from Spain Regardless of Revolution

Suministros Frigorificos, Ltda.
Accessorios De Toda Clase Para La Industria Frigorifica
(All Kinds of Accessories for the Refrigeration Industry)
Maria Diaz De Haro, Numeros 48 Y 50
Bilbao
Sept. 29, 1936

Dear Sirs:

Herewith we have the pleasure to return you the Coupon you have sent us, to renew our subscription to ELECTRIC REFRIGERATION NEWS for another year in combination with:

MASTER SERVICE MANUAL
1936 SPECIFICATIONS BOOK and
REFRIGERATION ENGINEERS MANUAL.

as pointed out on the enclosed coupon.

For the payment of the above stated you will receive from Messrs. F. Marti & Company, 115 Broad Street, New York, a remittance of $8.00, for our account.

At the same time we beg you to notice our new address as on the heading of this letter, i.e.:

Maria Diaz de Haro 48 y 50—Bilbao

Also send us the publications above ordered separately each one, by mail.

JEFE DE VENTAS

Kelvinator Cruise Story Wins Praise of Voyager

704 Watkins St., S. E.
Grand Rapids, Mich.
(Employed by Consumers Power Co.)
Oct. 15, 1936.

Editor:

As a subscriber to the AIR CONDITIONING AND REFRIGERATION NEWS, I certainly appreciate the space you gave for publication of "A Journal of the Kelvinator Cruise" in your last two issues.

I was one of the domestic salesmen winning a merit cruise and reading Mr. Quinn's story was like reading about a big football or world series game after witnessing it personally.

Inclosed you will find 30 cents in stamps for which I would like as many copies of the Oct. 14 issue that 30 cents will cover, including mailing cost.

I'm supposed to write some out-of-town relatives and friends about the "Cruise" and the copies I receive sure will save me time and give the folks more news than I could ever write in a letter.

The cruise sure was a "pip." A reward, vacation, and educational trip I'll never forget.

Thanks in advance for your attention.

GEORGE MEYER.

E. T. Williams Corrects and Adds to Story in the 'Pioneer Number'

E. T. Williams
Consulting Engineer
51 East 42nd St.
New York City

Miss Winifred Hughes:

I have read your article in the Oct. 7 issue of AIR CONDITIONING AND REFRIGERATION NEWS with considerable interest and, in the main, find it to be correct. There are, however, some few items which might be misleading; and, in view of the fact that this is a printed record having wide circulation, I consider it advisable to bring them to your attention. The items are as follows:

Reference in the interview to my published works gave March, 1922, as the publication date of the article titled "Shaft Seals for Small Refrigerating Machines," published in *Refrigerating Engineering,* instead of *March, 1929.*

In column two, paragraph four of the interview, mention is made to "new type of German manufactured machine," I do not recall mentioning this, so far as I know, such was not under consideration.

Paragraph six of this column stated that "Mr. Fred Kimball was manager of the company's fractional horsepower motor division," this should read "of the General Electric Co."

In paragraph seven, column two, page 24, not quite all of the facts are given. At this time two companies were incorporated simultaneously; viz., The Federal Refrigerating Co. and The Federal Automatic Refrigerating Co. Following this, the Federal Refrigerating Co. acquired the assets of four other independent companies, in exchange for shares of its stock. These assets were then transferred to the second company (The Federal Automatic Refrigerating Co.), and the first company (The Federal Refrigerating Co.) disappeared from the scene.

The companies included in this transaction were:

The Singer Ice Machine Co.
The Ballantine-Cleveland Co.
A. T. Marshall of Boston and
The Dunham interests at Hartford, Conn.

There was, so far as I know, no "Federal Automatic Co." in this set up.

My firm name was "Westerberg & Williams," Westerberg being the senior partner whose interest I finally acquired but retained the original firm name.

Reference to Mr. Seaber's early connection with Servel ice equipment, in paragraph four, column three, page 24, does not give a complete picture of the situation.

Mr. Seaber was associated with Howard Dennedy, the designer of the original Servel machine; and they, with Zimmerman, Cooper, Johnson, and possibly others, were working days, nights, and Sundays to put it over as they were very short of funds.

Hercules manufactured the machines on deferred payment account, taking notes, I am told, secured by all the assets of the company. At this time, I was informed, these notes aggregated about $350,000. The machine had reached the stage of public acceptance and Hercules was about to foreclose on the notes and take over the whole thing.

It was the parent company that was in financial distress; there was no "eastern sales agency," as stated in the interview.

In paragraph 10, column three, the copy should read:

"The money was finally obtained from interesting a group of men, among whom were Ray Lillibrind, Paul Plunket, and *Pynchon & Co.* (not Albert Penchot). Two paragraphs down, mention is again made of Penchot when the correct name should be Paul Plunkett: "Paul Plunkett and Seaber had been executives of the parent company proceding this."

Reference made to magnetic clutches which I designed (column four, paragraph eight, page 24) should read: originally designed for "DC" current, not "AC."

In describing the features of the solenoid reciprocating compressor, the copy in paragraph 14, column 4, page 24, the word "osculates" is used in place of "oscillates."

Referring to my investigation of Spanish refrigeration market (page 25, column five) copy gives the date as 1922; it should be *1912.*

As above stated, the article is fundamentally correct. Some of the changes above indicated are of minor importance; there are others, however, that I feel should be corrected, especially that relating to the original financing of the Servel Co., and purchase of the plant at Evansville. Howard Dennedy also should be given the credit for initiating and designing the original Servel machine.

E. T. WILLIAMS.

'Valuable Historical Data' Says Henderson

Air Conditioning Manufacturers' Association
Southern Bldg., Washington, D. C.
Oct. 13, 1936.

Editor:

I just finished reading my copy of AIR CONDITIONING AND REFRIGERATION NEWS. You have presented some valuable historical data on the air-conditioning and refrigeration industries, and we would much appreciate it if you could send us four additional copies of this issue for our files. If there is any cost in this connection, please let us know so that we may reimburse you.

WILLIAM B. HENDERSON,
Executive Vice President.

Census Bureau Finds The News Useful

Department of Commerce
Bureau of the Census
Washington, D. C.
Oct. 1, 1936.

Mr. Cockrell:

Replying to your letter of Sept. 29:

I find that your Census report made out under the name of ELECTRIC REFRIGERATION NEWS was received some time ago, but that through some error in classifying and routing it here in the office, it did not reach the employe in charge of the returns for the printing and publishing industry until recently. This report is entirely satisfactory, and I regret that through the fault of this office you were asked to prepare another.

It is probably true that manufacturers and others engaged in business are manifesting increasing resistance in regard to the preparation of reports for government and other agencies, although I have been gratified to find that such resistance was very little in evidence in connection with the present Census of Manufacturers. I had expected that because of reduced personnel and other difficulties, a considerable proportion of manufacturers would either delay their returns or strongly object to reporting. There were some cases of this kind, of course, as there are at every census, but the general tone of the letters received from manufacturers has been strikingly friendly and free from criticism, and has, in general, manifested a spirit of ready cooperation.

This is by no means entirely due to the fact that the Census law provides penalties for failure or refusal to report. An increasing number of manufacturers are realizing that business can be conducted intelligently only on a basis of statistical information, and the demand for such information is vastly greater than it was at the beginning of this century. This is not to say that the bureau does not have its difficulties and problems, but I believe that industry as a whole appreciates the statistical work of this bureau and is ready to cooperate even at a considerable expense of time and work.

Those members of my staff who are in direct charge of the work on the several industries naturally are not in a position to keep in close personal contact with the manufacturers in those industries. It is for this reason that a great deal of use is made of trade journals, such as the ELECTRIC REFRIGERATION NEWS, as these supply information both as to new types of products and also as to new factories built, changes in management and ownership, and other factors of this kind that are of great assistance both in revising the schedules at each census and in correcting the lists of establishments. The better trade journals, particularly those that devote considerable space to technical developments, are especially valuable in connection with the group of industries concerned with machinery, electrical apparatus, etc., and the ELECTRIC REFRIGERATION NEWS is one of the most useful of these from the standpoint of the Census work. Considerable use is also made of trade directories, but as some of these are rather expensive, the funds available for their purchase are never sufficient to permit the acquisition of all that should be available for reference.

LEVERNE BEALES,
Chief Statistician for Manufacturers.

He Would Send News To Industry Trainees

National Air Conditioning Institute
314 Bell St., Seattle, Wash.
Oct. 14, 1936.

Subscription Manager:

At the outset, we want to congratulate you for your "Industry Pioneer" number of the REFRIGERATION NEWS of Oct. 7, 1936. It's a "knock out." As a matter of fact, I consider it the outstanding and the liveliest publication covering the field of Air Conditioning and Refrigeration available today.

My particular purpose in addressing you personally at this time is with regard to block subscription. In other words, it occurs to me very definitely, that everyone of our men who are taking training in A-C and Refrigeration, should have every issue of your paper. I am so strongly convinced of this, that I have sold the management on the proposition of the institute paying for a year's subscription of your paper, and extending it to every student as part of the institutional training.

For instance, on the basis of 100 subscriptions and up, what would be your rock bottom, in other words, your wholesale subscription rate to us? Under the circumstances, it would facilitate matters from every standpoint to have the REFRIGERATION NEWS mailed directly to each individual student; the names of whom would, of course, be submitted to you, either on special certificates, or your usual subscription form. The latter would, perhaps, be the more practical.

May I ask you to give this your deliberate attention, as I should like to have your report on this at the very earliest possible moment.

L. CHEVALLEY,
Sales Dept.

Answer: The following rates apply to group subscription orders to AIR CONDITIONING AND REFRIGERATION NEWS: five or more, $2.75 each for one year; 10 or more, $2.50; 20 or more, $2.25; 50 or more, $2.00; 75 or more, $1.75; and 100 or more, $1.50 each.

Remittance must accompany the order. Papers will be sent to individual addresses on group subscriptions.

George's Story Brings Foreign Market Closer

Scurlock Kontanerette Corp.
1477 Merchandise Mart
Chicago, Ill.
Oct. 19, 1936.

Editor:

Let the writer state that he read with a great deal of interest, the experience in your travels around the world. It was very unusual, and quite interesting.

We think your trip around the world is going to be helpful and beneficial in a great many ways to the refrigeration industry, as it is bound to bring our foreign buyers in closer touch with us here.

LEWIS H. SCURLOCK, President.

A Pledge of Cooperation On Specifications Book

General Electric Co.
Appliance and Merchandise Dept.
Nela Park, Cleveland, Ohio
Oct. 16, 1936.

I feel sure that the REFRIGERATION AND AIR CONDITIONING SPECIFICATIONS BOOK will be very useful to us.

We will be only too glad to cooperate with you on a revision of the SPECIFICATIONS BOOK for 1937.

K. G. ROE,
Commercial Engineering Div.

Enclosed is a check for renewing the writer's subscription to REFRIGERATION NEWS for another year. We have found this publication to be both interesting and extremely helpful in our business and we wish to wish you another year of continued success.—Russ Lewis, manager, dealer sales department, Fairbanks, Morse & Co., 217 S. Eighth St., St. Louis.

Correction

In the letter from W. J. van Wulften Palthe, The Hague, Holland, published in the "Letters" column of the Sept. 30 issue of AIR CONDITIONING AND REFRIGERATION NEWS under the heading, "The Dutch Market for Air Conditioning," two typographical errors were made.

The company's address is Mauritskade 29, instead of Mauritslaan 29, as printed.

Dimensions of the room cited as the average for which examples of cooling equipment should be carried is 20x15x12 feet, instead of 20x5x12 feet, as printed.

Around the World

With George F. Taubeneck

Difficulties which beset French importers of American refrigeration and air-conditioning equipment belong largely in the category of governmental interference. This instalment of the editor's survey of the French market is devoted to an examination of those difficulties, accompanied by the reporting of suggestions from prominent members of the French refrigeration industry as to what should be done to alleviate the situation.

Articles in Editor George Taubeneck's "Around the World" series have appeared in the following issues of the NEWS:

Jan. 8, 1936—Detroit, Mich.; Jan. 15—Jackson, Mich., and Chicago, Ill.; Jan. 22—St. Louis, Mo.; Jan. 29—Claremore and Tulsa, Okla.

Feb. 5—Dallas, Tex.; Feb. 12—El Paso, Tex., and Juarez, Mexico; Feb. 19—Yuma, Globe, and Phoenix, Ariz.; Feb. 26—San Diego, Calif. (also California Pacific Exposition).

March 4—Los Angeles and Hollywood, Calif.; March 11 and 18—San Francisco, Calif.; March 25, April 1 and 8—Honolulu, Hawaii.

April 15—Pago Pago, Samoa, and Suva, Fiji Islands; April 22 and 29—Auckland, New Zealand.

May 6—Melbourne, Australia; May 13 and 20—Sidney, Australia; May 27—Brisbane and Townsville, Australia.

June 3—Shipboard (Sidney to Singapore), and Darwin, North Australia; June 10—Papua and New Guinea, and Soerabaya, Java; June 17—Bandoeng, Batavia, Semarang, Soerabaya, Solo, and Djocja, Java; June 24 and July 1—Singapore, Straits Settlements.

July 8—Penang, Straits Settlements, and Rangoon, Burma; July 15—Calcutta, India; July 22 and 29—Benares, Agra, Delhi, and Bombay, India.

Aug. 5—Suez Canal; Aden, Arabia, and Cairo, Egypt; Aug. 12—Port Said and Cairo, Egypt; Aug. 19 and 26—Tel-Aviv, Haifa, Jerusalem, and Jaffa, Palestine.

Sept. 9—Complete text of paper delivered at Seventh International Congress of Refrigeration, The Hague, Holland; Sept. 16 and 23—Colon and Barcelona, Spain, and Marseilles, France; Sept. 30—Malta.

Oct. 7 and 14—Paris, France.

French Market Saturation

Compared with this country, France shows a very low rate of refrigeration saturation. United States, with an estimated 7,250,000 electric refrigerators in use as of Jan. 1, 1936, has a saturation of 34%. France, with an estimated 8,000,000 wired homes, has but 56,000 electric refrigerators on its lines—a saturation of but 0.7%.

In other words, to equal the point to which this country is already advanced, in terms of refrigeration, just 2,664,000 more units than are in use today in that country would have to be added to French power lines.

Consistent guaranteed increment of domestic load has become a life factor to the power companies who, in France as in many other countries, are barely succeeding in riding out the economic storm.

Refrigerator selling in France, under the auspices of the national power producers, should have reached today a measure of commercial proficiency which is only defeated by the quota obstacle, and again by a guarded, but none the less effective, policy of obstruction and restraint emanating from the cobwebbed strongholds of ancient vested private interests.

Slow progress, if any, is being made by most of the French companies in the development of a larger use of electricity in homes. The average performance might have been an annual increase of somewhere between 2 and 5%, which would mean that at this rate the French power companies would take from 20 to 50 years to double the present average consumption of their domestic load consumers.

These analytical flashes on French refrigerator market potentialities and on refrigerator merchandising activities, and their bearing upon the load factor in France, critics say, demonstrate the stifling effect directly and indirectly radiating from the refrigerator quota throughout the network of the economic system of France.

Prominent utilities in the metropolitan area, asked to estimate their 1936 increase in domestic loads for non-lighting purposes, were loath to venture any sales forecasts while the refrigerator quota decreed by the government continued to weigh heavily upon the most important factor of non-lighting current consumption in France.

With the exception of electric cooking ranges and water heaters, which are relatively scarce in France, the refrigerator is the biggest current user, as is shown by the following list:

	Cost of Electricity Per Month, Francs
Curling iron	1.00
Heating pad	1.00
Clock	1.50
Washing machine	2.00
Space heater	3.00
Kitchen mixer	3.00
Vacuum cleaner	4.00
Flat iron	4.00
Toaster	4.00
Percolator	4.00
Sandwich toaster	4.00
Radio	....
Ironing machine	8.00
Oil burner	15.00
Refrigerator	31.00

Revenue prospects awaiting French utility companies, if the refrigerator quota is lifted, has been sized up as follows by French Nema refrigeration engineers and salesmen:

Every 1,000 electric refrigerators on the central station lines means the equivalent of 1,000 new residential customers without any expense on the part of central stations for additional equipment.

The installation of an electric refrigerator in any home will definitely increase the current consumption by 600 or more kwh. per year.

Electric refrigeration insures such an unvarying load, day and night, winter and summer, that it tends to smooth out the peaks and valleys caused by the natural fluctuations of the lighting load.

The predetermined current consumption of an electric refrigerator permits to central stations an accurate anticipation of revenue.

The quota on refrigerators, these men claim, is costing the French power producers annually a loss of about 5 million francs, a loss which will be magnified if the quota becomes a permanent impediment.

While the composite loss to the French treasury may not be quite as evident, it is there, these men say, and is as important as the loss to national labor and its dependent homes, to the power companies and their stockholders, and to scores of groups or interests which are essential contributaries to the commonwealth.

* * *

Cooperative Campaign Plans Abandoned

American importers had made broad plans for cooperative campaigns with French utility companies, to bring low-cost refrigeration to the masses—but, unless the ban is lifted, most of this planning will have to go by the board.

The quota system has been used widely in France for the purpose of restricting imports of items other than refrigerators.

Main objections to the way the system works out are these:

If individual licenses are not issued to the importers proper, there is a rush of imports to the ports, and the quota is exceeded, because of the time necessary to collect returns from each port and issue the notice closing the quota. Goods in transit at the date of closing the quota are frequently admitted, and these have sometimes amounted to more than a year's quota.

The rush of imports at the beginning of each quota period and the consequent lack at the end bring about fluctuations of the market. (The allocation of refrigerator import licenses avoids these difficulties, importers admit, but this allocation involves a great deal of work and many questions of discrimination between competing firms, especially in view of the fact that the license is treated by the government in the manner of a vested right of the importer's agent in France.)

Quotas tend to increase prices, to the great profit of those who obtain licenses. The system tends to reserve trade for existing firms and existing sources of supply. This may have its advantages in times of crisis and disturbance besetting an established industry, but it is a serious fault in the initial phases of a new industry or in a permanent system.

The refrigerator quota decree, importers assert, will increase competition on the home market by diverting to or retaining within itself goods normally exported; and the intended benefit of the reduction of imports will be, to a considerable extent, lost.

The value of the growing domestic industry, they say, is lessened by this state of affairs, and monopolistic tendencies are cultivated to the detriment of consumers. The quota measure is, apparently, much less beneficial than it was intended to be by its advocates.

Disregarding the public health angle, opponents insist, the quota system will have outlived its purpose when it fails to produce less than the maximum intended.

A Hundred-to-One Shot It's a Dog

Along the Champs des Elysees, the beautiful wide boulevard so dear to Parisians, there is a constant stream of smartly dressed women walking their pedigreed dogs. The sight pictured at the right (a woman pushing a perambulator) is really quite rare; as the proportion of women-with-dogs to women-with-babies must be about 100 to 1.

Depreciation Surtaxes

Recent figures show that, while France's customs receipts have considerably risen above those for the comparable period of last year, despite curtailment of imports, the economic situation tends to stagnate under the protective national trend which seriously stifles the normal exchange of national wealth.

In addition to the quota, various other measures subsidiary in their nature, have been adopted by France ostensibly with a view to restoring her foreign trade to a sound basis. The principal expedients under this heading are the institution of currency depreciation surtaxes and the increase of customs duties.

It is said that the Chambre Syndicale is pressing for more stringent application of these expedients, in connection with the foreign refrigerator imports into France.

Depreciation of the currency of any country, it is generally agreed, lessens costs of production there, measured in terms of other currencies, and thereby lessens the effectiveness of protective duties of other countries aimed at keeping out its products.

France, in such cases, imposes extra duties on imports from the countries concerned, except on goods whose price is fixed by a world market and goods admitted free of duty.

This surtax, in the opinion of many, has probably prevented France from obtaining relief which would otherwise have been given against some of the British duties which bear heavily on French exports. While this may demonstrate in favor of a stable currency, it may also tend to unite countries whose currency has depreciated in a common opposition to the country imposing this surtax.

French organizations feel that the French independent industries enjoy a safe margin of protection in the tariffs which, including heavy transportation, incidentals and others, bring the landed cost to the importer in France to more than twice the average cost F.A.S. New York.

Under the circumstances, they say, a currency depreciation surtax appears unnecessary.

Lack Detailed Classifications

Another difficulty in the way of doing business with France arises from the fact that the present customs regulations were formulated before the development of the electric refrigeration industry in the country, and hence there is no specific and detailed classification for such equipment.

For example, thermostatic expansion valves which are required for the operation of automatic commercial units are subject to quota restrictions for some other class of devices. When the quota for these other devices has been filled, no thermostatic expansion valves can be imported, in spite of the fact that these articles are not manufactured in France, and are almost exclusively purchased from the United States.

American representatives are widely recognized as the most active in the French refrigeration field. They work harder, sell more (when they can get the units to sell), employ more salesmen, office workers, and warehouse men, and pay more taxes than regular French concerns.

With few exceptions, all of their employes are natives of France; and they use a great many parts manufactured in the country.

In the commercial field, especially, value of the imported machinery is only a small part of the total price of an installation. In many cases, the electric motors are purchased in France. So also are evaporators. Cabinets and cases, in most cases, are bought from French manufacturers.

Purchases of importers from dependent industries, such as those named, totaled about 20 million francs in 1935.

To give some idea of the importance which importers have gained in the French refrigeration market, consider these figures, covering the years 1930 to 1935:

Quantities imported (in metric hundredweights): 1930, 5,600; 1934, 16,195. Number of appliances imported: 1930,

(Concluded on Page 10, Column 1)

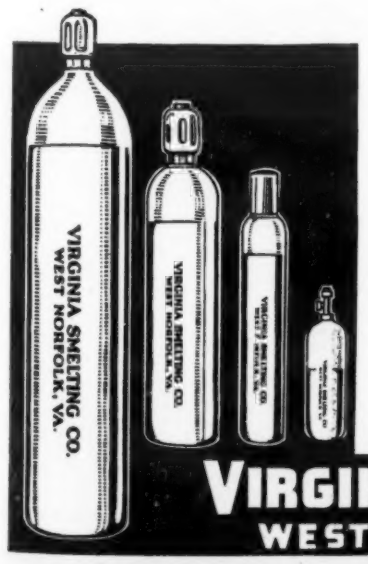
V-METH-L
(Virginia methyl chloride)

HIGHLY EFFICIENT AND ECONOMICAL
because . . .

1 V-METH-L maintains sub-zero temperatures at above-atmospheric pressures.

2 V-METH-L saves power. Its weight per cubic foot is small compared with weights of similar refrigerants; hence the cost of charging with V-METH-L is considerably less.

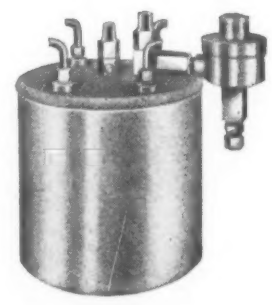
3 V-METH-L is not corrosive to copper or iron. It permits the use of flanged copper tubing.



V-METH-L and Extra Dry ESOTOO (liquid sulphur dioxide) are shipped from 72 distributing points for prompt delivery . . . For information and advice concerning any problem of refrigeration installation and servicing, write to F. A. Eustis, Sec., 131 State St., Boston.

VIRGINIA SMELTING CO.
WEST NORFOLK, VIRGINIA

The Brewer Will Aid You



Brewery Executives are recognizing that public acceptance is based on the condition and appeal of their beer, not as it leaves the brewery, but as it appears **in the consumer's glass,** and that the dispenser, therefore, is responsible in the last analysis.

The public is now demanding the perfect glass of beer—not just a glass of beer. The perfect glass of beer must be served at the correct temperature and possess brilliancy, taste, flavor, and body—also a rich creamy collar.

Temprite Beer Cooler alone, by reason of its exclusive features, combines all the factors necessary to draw the perfect glass of beer at the faucet, thereby satisying the customer and protecting the brewer's trade-name and investment. It also enables the dispenser to build up a profitable and increasing business.

See the brewers and dispensers and tell the wonderful Temprite story to them—thousands have never heard it. This awakened interest of brewers in Temprite means you are on the road to big business.

TEMPRITE 80° 40° INSTANTANEOUS

TEMPRITE PRODUCTS CORPORATION
1349 EAST MILWAUKEE AVE. - DETROIT, MICHIGAN
ORIGINATORS OF INSTANTANEOUS LIQUID COOLING DEVICES

Around the World

With George F. Taubeneck

(*Concluded from Page 9, Column 5*)

3,800; 1934, 13,828. Duties paid: 1930, 3,400,000 francs; 1934, 9,305,499 (not including import taxes). Import taxes: 1930, 1,756,780 francs; 1934, 3,291,928. Commissions and salaries: 1930, 9,188,-500 francs; 1934, 29,619,700 francs. Number of employes: 1930, 426; 1934, 786. Equipment purchases made in France (motors, evaporators, etc.): 1930, 9,275,300 francs; 1934, 19,999,810.

Limiting importations of a group which enters this much into the financial picture of the country, American representatives claim, seems to be in the nature of biting the hands that feed you—in other words, hurting the French treasury more than the country's own refrigeration firms will help it.

* * *

Advertising Hopeless

A good part of American representatives' expense is speculative sales promotion in the hope that business increases will follow. With things as they now stand, of course, expenses for this sort of "propaganda," as the French call it, is curtailed.

Importing firms, with the quota stacked against them, spend only what they must. They dare not go out after all the business they can get—all they can do is sell all the refrigerators they can get, and watch the prospects go by after that. None of them is altruistic to the extent of prepping the market for a competitor.

The present specific rates of duty average approximately 48% ad valorem on household refrigerators, and 21.1% on commercial refrigerators. In addition, there is an import tax of 2% of the duty paid value on American, Italian, Belgian, and English refrigerators.

Prices offered by French industrialists to commercial customers are generally less than those of importers. Daily, importers are forced to give up business because of the better terms offered by French producers. The same is true of domestic equipment. Where the price of American equipment for 100/120 litres of capacity runs between 3,500 and 4,200 francs, refrigerators of French manufacture are offered between 2,500 and 3,200 francs.

* * *

Frozen Distribution

Under the present system of administrating the refrigerator quota, any exporter who changes his French agent or representative takes the risk of losing his basic quota, since all right, title, and interest in and to such quota is treated by the government as belonging to the agent.

If the new representative was not in the refrigerator business at the time of the issuance of the quota, under the present system he cannot obtain a quota permit.

Present method of issuing import permits makes it comparatively easy to freeze the established channels of distribution. Manufacturers are almost compelled to maintain their connection with their present representatives in France, no matter how much he loafs on the job. Otherwise, the manufacturer will lose his basic quota.

Abuses in the system, it may readily be seen, may easily arise. If a French manufacturer wants to get an American rival out of the way, all he has to do is to induce that company's agent to sell his "right" to his own representative. When this happens, the first dealer is put out of the selling picture as effectively as if he had shut up shop for good—that is, at least until he can get himself another agent who has an importing "right."

All this may happen to an American manufacturer, regardless of how well his product is known in the country or how much money he may have spent in building up his product's worth in the public eye. Lose your agent, and you're lost, too.

* * *

Legal Interference

Of course, a good deal of this speculation comes under the category of legal inference—that is, it *can* happen, although it actually doesn't, often. But the mere fact that it *might*—that a representative of an American refrigerator manufacturer could be bought out by a native French concern, and be thus forced off the market, hasn't done a lot to encourage American firms to spend an overly large amount in sales promotion.

The fractional monopolies which this practice tends to create, French non-syndicated manufacturers and American representatives claim, are in restraint of trade. By weight of both ancient and contemporary authority of French doctrinal commercial jurisprudence, they point out, the system is "wholly untenable," both from the standpoint of international trade exchanges and the freedom of trade within France itself.

As a temporary measure, pending more complete agreement between France and the United States on the subject of administrating quotas, the French government is understood to be planning the institution of internal license system for the allocation of industrial quotas among the various importers, subject administration to be submitted to an organization authorized by the United States government and approved by France.

The plan, it is said, would allow the French government to resume its freedom of action, if it thinks the licenses are not being allocated properly.

This licensing organization, it is reported, would have access to French government officials to insure the smooth operation of the quota system.

* * *

Central Organization Suggested by Nema

Unfairness of the present quota system, which, in effect, puts the American importer at the mercy of his French agent, whom he supports by advertising campaigns and sales promotion efforts, would have been largely avoided, Nema representatives believe, if administration of it had originally been placed in the hands of one central organization.

They suggest, for this important work, either the French Nema committee, or the U. S. Chamber of Commerce in Paris.

In their efforts to bring about a change in the present quota system, American importers' agents and independent French manufacturers have established about 70 "reasons why," covering what they believe are the most unfair portions of the decree. Some of the important points brought up are:

1. That the French Syndicate does not represent more than 30% of the country's enterprises whose interests are involved in the outcome of the quota problem.

2. That the Syndicate, in putting through the quota decree, did so without consulting independent French manufacturers and American agents, who dominate the French market, and whose payrolls, expenses, and contributions to the French treasury are much greater than the Syndicate's own.

3. That the Syndicate's action is an ill-concealed move, in the guise of national protectionalism, to run the French non-syndicated firms and American import agents out of the refrigeration business.

4. That instead of periling French industry, American imports have really given it life, and have furnished all the impetus the industry has received up to this time. Importers, they assert, are still the backbone of the French industry.

5. That much of the refrigerating machinery imported is not obtainable in France; that, in the commercial field, only about one-fifth of the machinery is imported, the other four-fifths being manufactured in France, employing French labor.

6. That importers spend about 5 million francs a year in advertising to promote the good of the industry as a whole. French firms themselves do little or no advertising.

7. That the so-called "independent" French industry itself imports from one-third to one-half of its equipment from other countries, principally from the United States.

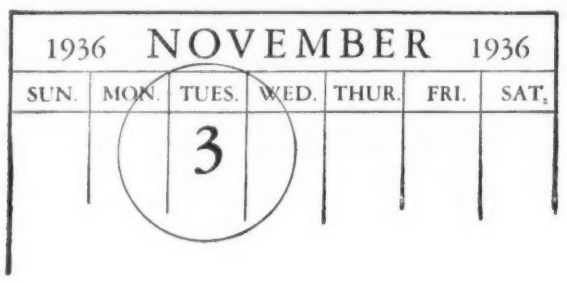
8. That there was no abnormal increase of imports during 1934, as shown in French customs figures. While composite imports totaled 16,195 metric quarts, about 9,000 mq. of this was imported under a different tariff 7,195 mq. as the 1934 import figure, a reasonable increase over 1933 imports, which totaled 5,958 mq.

9. That the Syndicate's charges of dumping by importers is unfounded in fact, but that Syndicate members themselves are known to have engaged in price cutting under circumstances which leave them open to charges of unfair competition.

10. That American models and equipment are currently being copied by French manufacturers, who themselves do not have research facilities to design models of their own, and who cash in on the time and money spent by American manufacturers whose products they are trying to bar from the country.

11. That large and powerful French manufacturers, who hold refrigerator patent and manufacturing rights, have steadfastly refused to get into production, principally because of the high expense involved and the difficulty of making any sort of showing in the foreign field, now pretty well conceded to other countries.

12. That keeping up the quota impediment will result in a loss of approximately 10 million francs a year to French utility companies, because native manufacturers do not produce enough refrigerators to justify an extensive load-building campaign.



A Momentous Day for America

The day of a national election is always a great day in the United States. This year, 1936, it is perhaps even more important than it has been in the past. Big issues will be decided by the election of Nov. 3rd. 1936.

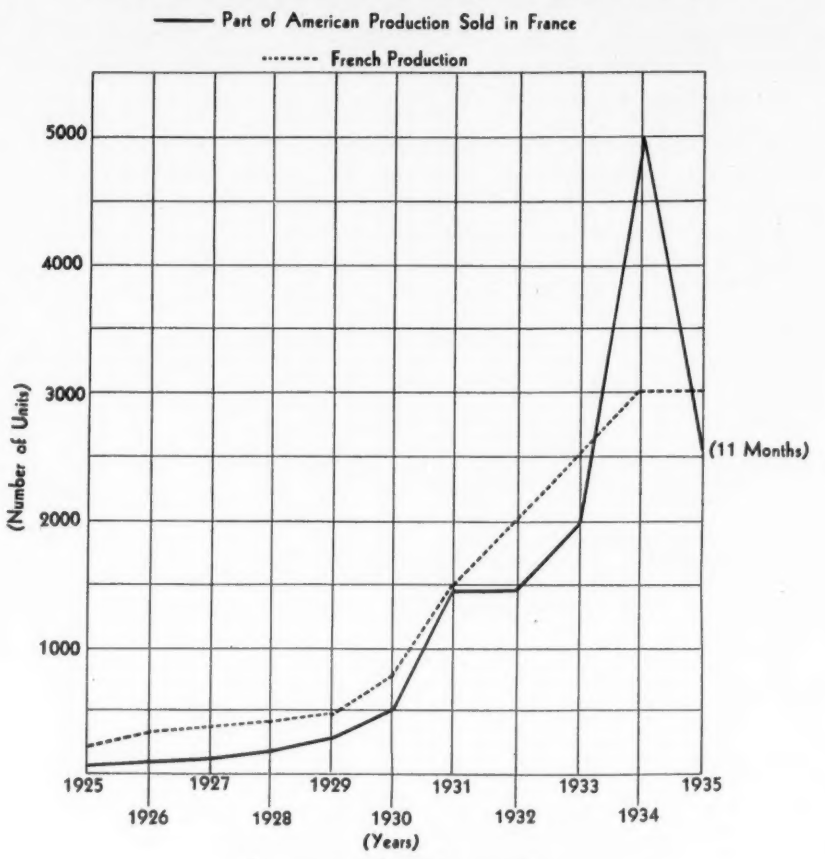
It has been said that no election since 1860 has had so great a bearing on the future course of this country, as will the election of 1936.

In the national election of 1932 there were 43% of those who had the right to vote who did not take the trouble to go to the polls.

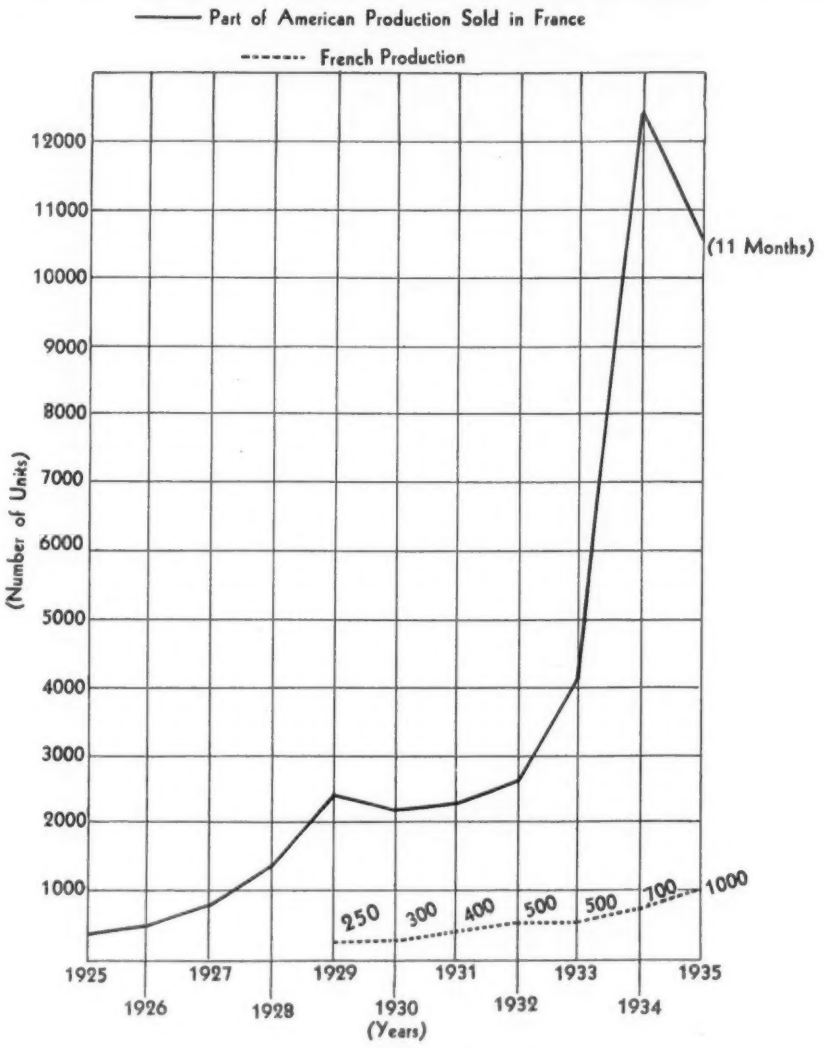
The responsibility for the result of the election this year rests on the shoulders of every individual man and woman who has the right to vote—and if YOU are entitled to vote, be sure that you let no sacrifice of time or inconvenience keep you from registering and voting Nov. 3rd, 1936.

Vote!

Comparative Sales of American and French Refrigeration Equipment in the French Home Market, 1925-1935



Commercial Refrigeration



Household Refrigerators

Possible Effects of Robinson-Patman Act on the Industry Outlined by Dun & Bradstreet

Editor's Note:

The Robinson-Patman Act, with its possible effects on pricing, discounts, advertising allowances, and manufacturer-distributor relations, continues to be a leading topic of discussion among business men in all lines of industry. A short time after the act had passed, the NEWS, in the Aug. 5 issue editorial page, reviewed the possible effect that the act might have on some price and merchandising practices in the electric refrigeration industry.

Since that time, however, legal experts and economists have delved more thoroughly into the act and the ways in which it may affect some generally accepted business relations.

The most thorough analysis of the act that we have encountered is the "Check List of Possible Effects of the Robinson-Patman Act," by Willard L. Thorp, director of economic research of Dun & Bradstreet, Inc., and Edwin B. George, associate economist for the same organization.

This originally appeared as an article in the *Dun & Bradstreet Monthly Review* and has since been supplemented.

The NEWS is publishing the following excerpts from "Check List of Possible Effects of the Robinson-Patman Act" which it considers most likely to apply to the refrigeration industry. Publication of this information will be in two instalments: the first in this issue, and the second probably in next week's issue.

It should be understood that the following are only *excerpts* from various parts of the article, and also that it treats only the possible effects of the law as it stands, and does not deal with the question of constitutionality.

"Enough is now known of the Robinson-Patman Act to make generally clear (1) that many aggravating uncertainties lurk in its language which only the courts can resolve, and (2) that these uncertainties are quite secondary to the fact that a new working principle has been injected into business life which promises definitely to alter existing practices and trade relationships.

"The specific points discussed are grouped under the following heads:

Products
Prices
Allowances and Services
Brokerage
Cost Accounting and Allocation
Channels of Distribution

"The orderly character of the presentation does not imply that the actual effects of the law will be in any way orderly. Many of the developments, which ingenious minds can deduce from the formal phrases of the law, may never happen in reality. Others may take unexpected forms in the process of adjustment to the intricacies of business operation. What ever the initial impact of the law, one can be assured that the final results will appear at points quite unforeseen.

"Obviously, a summary such as this, of most of the possibilities suggested to date, will give an exaggerated impression of the possible influence of the law. So many prophecies from so many sources on so many subjects cannot be simply added up to make a forecast of the ultimate pattern.

"Furthermore, the exact application of many of these generalized suggestions will vary from industry to industry and according to the state of facts.

"This is especially true of the basic requirement underlying the whole act, that injury to competition or a competitor must be demonstrated.

"Thus, the product of an industry may be so small a part of some other product of which it eventually becomes a part, viz., shoe laces sold to shoe manufacturers, that the most erratic price policy could not be charged with causing injury to competitors among the purchasers (although it is conceivable that a competing seller might have a case).

"By the same token, disputes will progressively arise as the primary product retains indentity or value in the subsequent product, as in the successive stages of steel manufacture. Likewise a given practice logically improper under the law, such as special packaging for a valuable product, may play so small a part in the total transaction that specific injury would be impossible to prove in court.

Products

"1. *Distinctive Grades and Qualities.* The law concerns itself with discriminations in price for "commodities of like grade and quality." Some sellers have already started to overhaul price lists and catalogues to make sure that like grades under different names, numbers or brands are not being sold at different prices.

"Lawyers are advising clients to make sure that grade differences relied on to justify price differentials are substantial and established in good faith.

"2. *Standardization.* The Act may provide a new incentive toward development of trade standards to forestall the ready and petty complaints of customers who would be continually seeing or imagining that they saw a cause for complaint in different price treatment of goods which to them were practically alike.

"3. *Different Brands for Identical Commodities.* Majority opinion appears to be that, in spite of different brands or different consumer acceptances, "like grade and quality" will exist if the commodity is intrinsically the same.

"Independent price structures cannot therefore be created when the only distinction is separate branding, but must conform to the criterion of differential costs.

"4. *Effect on Number of Brands.* Manufacturers turning out private brands for distributors may decrease their number in products similar in grade and quality to their own brands, and increase them in dissimilar grades and qualities. The net effect of these subtractions and additions is at the moment expected to be an increase in confined lines, assuming that the full possible variety of grades and qualities is not already occupied.

"As an offset to the foregoing trend, the increased cost and difficulty of putting out a large variety of branded lines may tend to hold down the number of either owned or private labels that some manufacturers will be willing to sell.

"5. *National vs. Distributor-Owned Brands.* The major effect of any increase in the number of distributor-owned brands may be to shift existing sources of supply for them rather than substantially increase their share in the total market.

"Presumably the size of the total market will not be affected by any change in the character of brands, and any gain in distributor-owned brands would have to be at the expense of national brands.

"7. *Obsolescence.* The law permits price concessions in the case of obsolescence of seasonal goods. In mercurial industries this permission might actually speed up style changes, many of them doubtless only moderate or nominal.

"It raises interesting questions for industries with regular style changes, such as radio. Some lawyers appear a little nervous over the temptation to abuse such a privilege and are warning that the changes must be real.

Prices

"9. *One-Price Policies.* Trends toward a one-price policy may be strengthened, particularly in industries where trade sentiment is already moving in that direction. A few large industries have already taken the step.

"Such actions of course are premised on the point of view that the law merely provides limits to discrimination, and does not require that discounts are compulsory wherever economies are earned.

"10. *Emphasis on Quality.* In the previous section on 'Products' attention was called to the possibility that any trend toward standardization would be accompanied by an increased marketing emphasis on price. The reverse of course must also be true. To whatever extent prevailing confusion in the price field is relieved, selling effort should shift to quality.

"11. *Discount Bases.* Attorneys frequently advise that manufacturers may still base their discounts in any manner they see fit, either on specific orders, annual or semi-annual purchases, cumulative purchases, or otherwise.

"Relative costs, computed and allocated more carefully than has been the general custom would be a necessary by-product of such distinctions. The legitimacy of this kind of tolerance is defended, naturally enough, by certain prominent distributors.

"Some manufacturers on the other hand will try to use the law to get away from quantity discounts based on cumulative quantities.

"12. *Reduced Quantity Spreads.* The most common expectation is that previously existing spreads between prices for different quantities will be somewhat diminished, on the assumption that they have exceeded any demonstrable economies in cost.

"13. *Ceiling Discounts.* The law grants authority to the Federal Trade Commission to fix quantity limits under certain conditions, chief of which is the fact that available purchasers in greater quantities are so few as to lead to monopoly.

"14. *Number of Quantity Classes.* In order to give each purchaser the full economy arising from the quantity taken, the number of quantity classes may be increased. Furthermore, in some cases, quantity discounts may be individually negotiated, rather than attained from fixed schedules, because of the desire to graduate them more closely to actual quantities taken.

"One group of analysts insists that under the law, broad quantity discount brackets are thrown in jeopardy. This argument rests on the proposition that prices between any two like customers may be compared in determining the propriety of a price structure. If two are compared who fall on the two sides of a boundary line between two quantity discount brackets, then if the step in discount is considerable, it may open the way to a charge of discrimination.

"For example, if a commodity priced at $1.00 has a price schedule giving a quantity discount of 10% for 1,000 units or more, then a purchaser taking 950 units will pay $950 while one taking 1,050 units will pay $945.

"15. *Small Orders.* It is well known that the cost of filling small orders, especially for broken packages, is often disproportionately large, but seldom recognized in price.

"It is therefore argued that manufacturers and wholesalers may have to consider establishing price spreads (where selling across State lines) between two sizes of small orders as units vs. dozens, or eliminating such small orders because of the discrepancy between costs and prices, or the plain lack of accounting facilities where with to measure relative costs.

"This line of argument, of course, runs up against the widely held theory that discrimination in favor of small orders will continue to be legitimate and that only spreads unfavorable to them are hit by the law.

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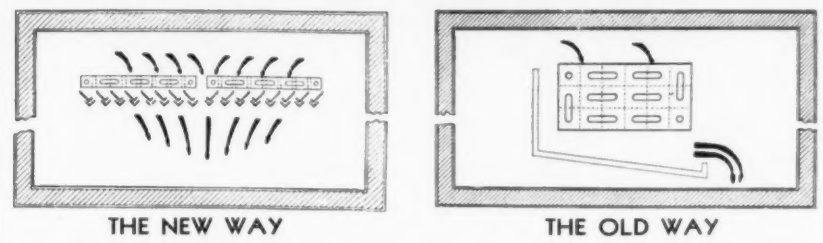

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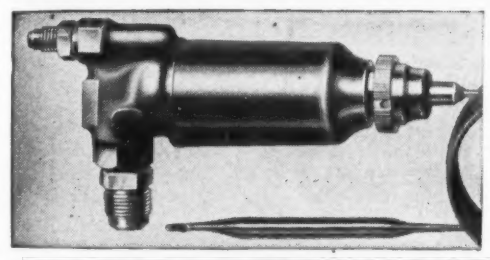

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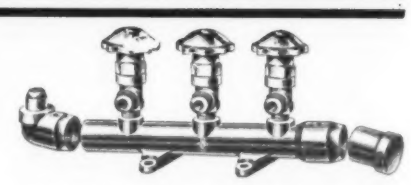

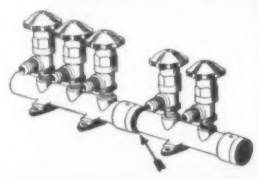

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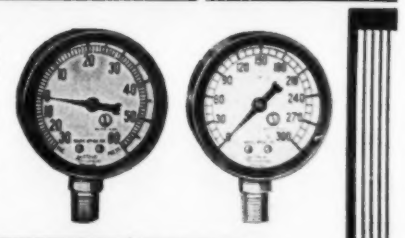

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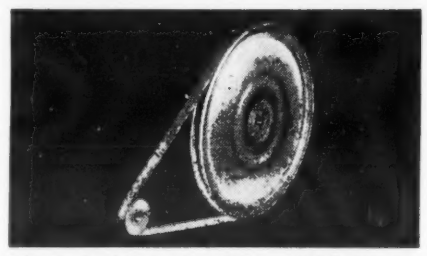

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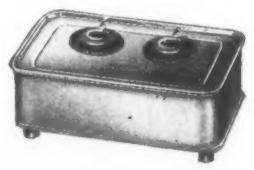

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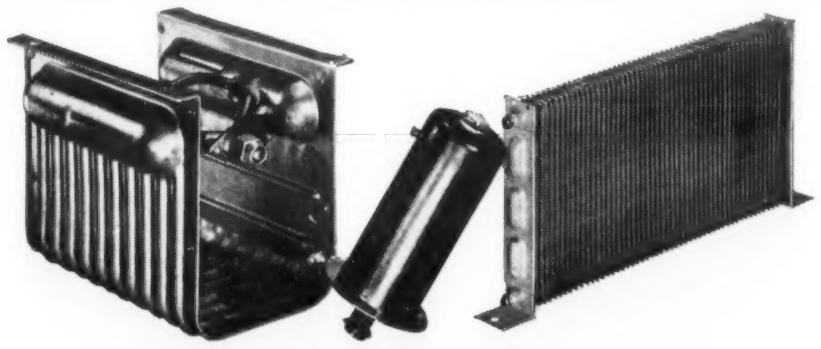

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Air Conditioning Made Easy

By F. O. JORDAN

Condensing Unit Performance Under Varying Conditions

SECTION NO. 4

Condensing Unit Performance

The purpose in this section is not to give a detailed description of this important piece of equipment, nor to discuss the theories involved in its design, but rather to discuss the performance of the condensing unit under different conditions.

Principal points to be considered are as follows:

1. Effects of Change in Suction Pressure

An increase in suction pressure (r.p.m., head pressure, condensing water flow rate, and condensing water temperature rise being allowed to vary only by the amount of variation produced by the change in suction pressure), results in an increase in developed capacity, while a decrease in suction pressure results in a decrease in developed capacity.

The capacity rises with suction pressure for two reasons. First, because the gaseous refrigerant weighs more per unit of volume at higher pressures and, second, because its heat content per pound is greater. For these reasons the compressor moves more pounds of gas at a higher heat content per pound at higher suction pressures, even though the increased load slows the compressor motor down slightly.

An increase in suction pressure results in a slight decrease in r.p.m. The ideal refrigeration compressor motor has a high starting torque with as low starting current as is consistent with this feature, and a flat speed curve so that the change in r.p.m. with change in load, will be slight.

An increase in suction pressure results in an increase in head pressure, provided that condensing water flow and inlet temperature remain constant. However, if the condensing water rate of flow is increased sufficiently, head pressure may be held constant.

Since a rise in head pressure would tend to retard the rise in compressor capacity at the time when it is needed most to present an undue rise in refrigerant temperature at heavy load, the condensing unit should be provided with a "head pressure control" consisting of an automatic method of increasing condensing water flow sufficiently to hold head pressure practically constant.

An increase in suction pressure results in a rise in current consumption, but the rise in current consumption being less than the rise in capacity, an increase in suction pressure results in a rise in efficiency. An increase in suction pressure results in a rise in condensing water flow, when the automatic head pressure control is used.

Sometimes it is necessary to reduce the capacity of the condensing unit in order to raise the refrigerant temperature in an air-conditioning coil to a point at which it will balance its load more efficiently.

This may be done by throttling the suction line, as the resulting increased pressure drop will lower the suction pressure at the condensing unit which in turn will lower its capacity. Pressures should not be reduced more than 5 lbs. by throttling.

2. Effects of Change in Head Pressure

An increase in head pressure tends to produce a decrease of efficiency, so that head pressure should be held as low as practicable considering the fact that lower head pressure demands higher condensing water flow, and the fact that head pressure must be ample to force sufficient liquid refrigerant through the condenser-receiver into the direct expansion coil or evaporator.

With higher inlet condensing water temperature, the head pressure regulator must be set to allow higher head pressures in order to avoid prohibitive rates of flow of, and costs of, condensing water.

Higher head pressures are accompanied by greater noise and higher maintenance costs, and should be limited in general to 140 lbs., with 160 lbs. as the absolute maximum.

An arbitrary increase in head pressure results in a decrease in developed capacity and an increase in power consumption because a heavier load is thrown on the motor which reduces its r.p.m. and increases its power input.

Such an increase in head pressure results in a rise in suction pressure which, under this particular condition, does not indicate an increase in developed capacity, as it is produced by the inability of the compressor, at the reduced r.p.m. and less efficient valve action, to keep up with the rate of evaporation in the expansion coil or evaporator.

3. Effects of Change in Condensing Water Rate of Flow and Inlet Temperature

At any given inlet condensing water temperature, an increase in the condensing water rate of flow will raise the developed capacity because the final condensing water temperature will be reduced which will result in a greater mean effective temperature differential between condensing water and refrigerant, and because the transmission factor between water and tube will rise with water velocity.

A rise in inlet condensing water temperature results in a reduction in condensing unit capacity, unless the rate of water flow is increased sufficiently to offset the rise in inlet temperature. Usually it is not economical to increase the rate of flow to this extent. The economical rate of flow to use under average conditions is indicated by the Condensing Unit Capacity Tables in the Capacity and Performance Section.

At a given capacity and at a given inlet condensing water temperature, a rise in condensing water flow rate will increase the water consumption, and will reduce power consumption because the head pressure is reduced. The most economical rate of condensing water flow for any given condition will depend upon the relation between water and power costs, and upon the temperature of commonly available condensing water.

Based upon average conditions, the economical rate of flow increases with rise in inlet condensing water temperature, while the economical temperature rise of condensing water through the unit, becomes less.

The recommended rate of flow, and final temperature of condensing water as shown by the condensing unit capacity tables in the Capacity and Performance Section has been based upon average conditions, and will give economical results under such conditions.

Under special conditions when it is desired to increase or reduce the condensing unit capacity in order to balance more exactly some particular load, it may be advisable to change recommended head pressures by varying condensing water flow rates, remembering that higher head pressures reduce developed capacities, and vice versa. This change in water rate and resultant change in head pressure is effected by changing the adjustment on the head pressure control valve.

4. Effects of Change In R.p.m.

Other conditions being held constant, except for the variation produced by the change in r.p.m., an increase in r.p.m. results in an increase in developed capacity and in power consumption because more refrigerant is handled. If the head pressure is held constant, an increase in r.p.m. will result in an increase in condensing water rate, or if the condensing water rate is held constant, the head pressure and final condensing water temperature will rise.

If it is necessary to change the condensing unit capacity, this may be done by changing motor or compressor pulley sizes until the change in r.p.m. has produced the desired capacity change. Of course, care must be taken not to overload the compressor motor nor attain improper or noisy compressor speeds.

Reduction in r.p.m. is a very efficient method of reducing compressor capacity, since both power consumption and water consumption are reduced.

In general, raising the compressor r.p.m. is a more economical method of increasing capacity than opening up the head pressure control valve beyond the recommended setting, because the resultant rise in operating cost due to the rise in power and water consumption with the higher r.p.m. usually will be less than the rise in cost due to the rise in

(Concluded on Page 13, Column 1)

Where to Find Previous Articles in This Series

Instalments of Mr. Jordan's series on air-conditioning engineering for practical use have been published in the following issues of Air Conditioning and Refrigeration News:

Sept. 23—"What Is Air Conditioning?" In which the author straightens out some of the garbled views current today concerning air conditioning and what it is supposed to accomplish.

Sept. 30—Section 1: Introduction. The purpose of the manual. Section 2: Some definitions and simple thermodynamics in common use in air-conditioning practice.

Oct. 7—Section 3: Coil Performance. Six variables which influence capacity of the properly designed and constructed coil.

Oct. 14—Coil Performance (Continued). Applying the factors which determine proper coil operation. Section 3A: Water Cooler Performance.

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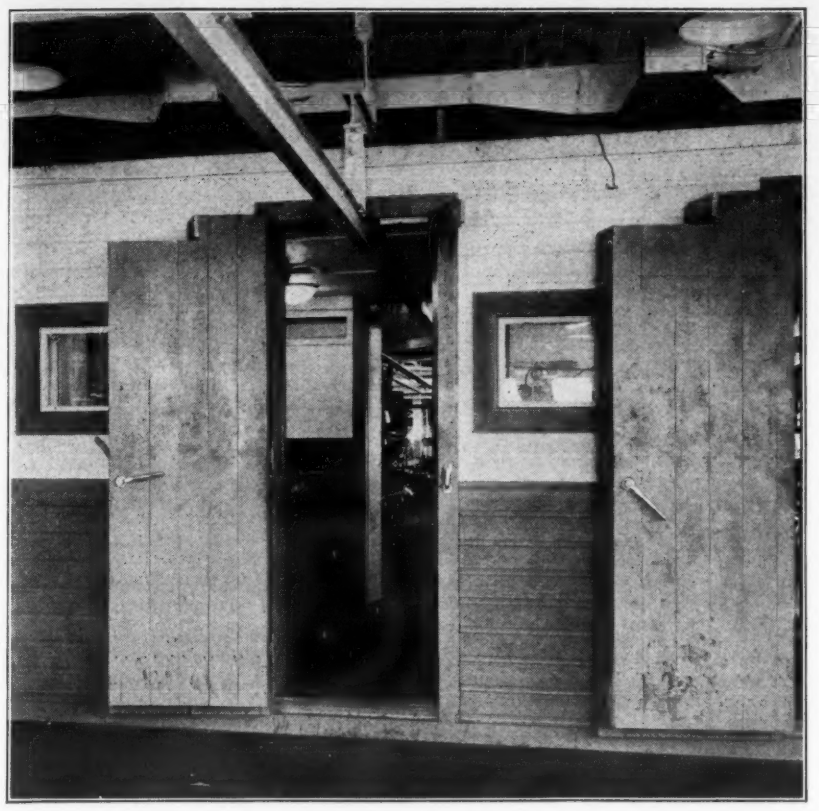
Westinghouse Conditioned Test Room



Air conditioned, sound-proof test room in the Westinghouse appliance manufacturing plant at East Springfield, Mass. Mounted overhead, a hermetically sealed condensing unit supplies cooling. A sound-proof duct system, with flexible connectors, distributes the conditioned air.

Condensing Unit Performance Factors

(*Concluded from Page 12, Column 5*)

water consumption alone, when capacity is increased by allowing more than the recommended rate of condensing water flow.

5. Effect of Liquid Refrigerant in the Compressor

Every precaution must be taken to prevent liquid refrigerant from passing through the air-conditioning coil and flooding back through the suction line to the compressor, for the presence of liquid refrigerant in the crankcase of the compressor has the following results:

(a) The capacity of the compressor is lowered because the gaseous refrigerant given off by the liquid refrigerant as it evaporates, takes up a portion of the volumetric capacity of the compressor so that not so much of the capacity is left to work upon the load. The result may be explained by saying that since a part of the capacity of the compressor is utilized in doing useless internal work, only a portion is left available to do the desired outside work.

(b) Boiling or rapid evaporation of liquid refrigerant in the crankcase tends to carry a portion of the oil up through the compressor valves and into the system. Slugs of oil in passing through the valves frequently result in broken valves, while the presence of quantities of oil in the condenser and in the air-conditioning coils, reduces their capacity. This condition is known as "slugging," and is accompanied by a clicking or knocking.

(c) The refrigerating effect of the evaporation of liquid refrigerant in the crankcase tends to congeal the lubricating oil in the crankcase, so that poor lubrication of the compressor bearings results. This condition, combined with the fact that much of the oil is carried away from the crankcase where it is needed, frequently results in burned out compressor bearings, when a condition of bad "flood back" is allowed to continue for some hours.

"Flood back" (or "frost back," as it often is called) may easily be detected by the feel of the compressor crankcase to the hand. In order to be certain that no liquid refrigerant is in the crankcase, the crankcase should feel warm to the touch. More aggravated cases of "flood back" may be recognized by the clicking or knocking sound as oil "slugs" past the valves. "Flood back" is remedied by reducing the supply of refrigerant to the air-conditioning coil.

6. Lubricating Oil

Obviously it is necessary to provide an ample supply of lubricating oil for the compressor bearings. Since these bearings are in such intimate contact with the gaseous refrigerant, it is inevitable that a certain amount of oil be carried along with the refrigerant throughout the system.

However, for the reasons stated above, the quantity of oil in the system must be kept as low as possible. The oil used must be specially selected for refrigeration service. It must be of such a character that it is not affected by the refrigerant used, and is affected as little as possible by low temperatures. It must be entirely free from moisture, or sulphur.

Usual practice in compressor design is to use the bottom of the crankcase as an oil sump or reservoir. From the crankcase, oil is splashed or carried onto the cylinder walls, and certain bearings, while oil may be circulated under pressure from the sump to certain bearings. While it is important that a sufficient supply of oil be maintained in the crankcase, it is equally important that the oil level be not carried too high, or an undue amount of oil will be "slugged" over into the system, with practically the same results which were described above under the sub-heading "Effect of Liquid Refrigerant in the Compressor."

Since a certain amount of oil will be carried over with refrigerant at all times, it is very important that the entire refrigerant system be so designed that the oil cannot be trapped or pocketed, for if the oil is not returned to the crankcase as rapidly as it is carried away, the time will come when insufficient oil remains in the crankcase to lubricate the bearings.

If possible, the condensing unit should be located at the low point of the system. So far as possible all gaseous refrigerant passages such as suction lines and air-conditioning coil tubing must be sized so that the refrigerant velocity at low load is sufficient to carry the oil along (1,000 f.p.m. will suffice).

At receivers and similar points where it is impossible to do this, the outlet should be at the bottom. In this connection, it is inviting trouble to connect two condensing units into the same refrigerant system because of the fact that it is rare that the oil will return in equal quantities to each unit so that frequently one of the units eventually will "slug" oil over into the system because its oil level is too high, while the other unit will not be lubricated properly because of an insufficient supply of oil.

It is safer to divide the air-conditioning coils or units into groups and arrange the refrigerant tubing so that each group of coils or units, together with one condensing unit, will form one complete individual system insofar as refrigerant distribution and circulation are concerned.

Air-Conditioned Testing Room Aid to Accuracy At Westinghouse Plant

EAST SPRINGFIELD, Mass.—To provide more comfortable working conditions for the operators, and to insure greater accuracy of the work, air-conditioned testing departments are now being used at Westinghouse Electric & Mfg. Co.'s appliance manufacturing plant here.

Final tests made to insure quietness of operation and mechanical and electrical efficiency of such appliances as fans, food mixers, and vacuum cleaners, are an important part in the manufacturing process. These tests are carried on in sound proof and practically air tight test booths.

Previous to the installation of air conditioning, the ventilation of these booths was taken care of by the addition and proper circulation of fresh air. This system provided no means for the removal of internal heat created by the appliances and the operators, and temperature rose considerably.

To counteract this condition, a central conditioner and a distributing duct system, which takes care of several test booths, was installed. The duct is lined with a sound absorbing material and is connected to the test booths by means of canvas connectors. These features reduce noise transmission from the fans and from outside sources.

The system is designed so that all of the air may be recirculated or else partly recirculated, and make-up air added in any desired proportion.

Ford Dealer Showroom & Office Conditioned

ST. LOUIS—Show room and offices of Chambers Motor Co., local Ford and Lincoln dealer, were recently equipped with Frick air conditioning.

The system consists of a 5-hp. Freon-12 unit, connected to a central conditioning cabinet and fan located in a small unused room back of the general offices. The compressor is placed over a stairway leading to the basement.

Offices of the company are on the mezzanine, just off the show room and, with four private sales offices on the show floor, are completely air-conditioned.

Home to Be Summer Resort Of Future, Says Carrier

NEW YORK CITY—The home as the summer resort of the future was described by Willis H. Carrier, chairman of the board of Carrier Engineering Corp. in his address to the annual convention of the Society of Residential Appraisers Oct. 15, at the Waldorf Astoria hotel.

After pointing out that large scale air conditioning was first employed not in the home, but in railroad trains, Mr. Carrier continued:

"Truly, the home may be a summer resort. In winter or summer it can and should be the most healthful and comfortable place in the community. With air conditioning, windows may be kept closed the year-round, eliminating outside dirt and noises, producing the indoor climate desired."

The Buyer's Guide

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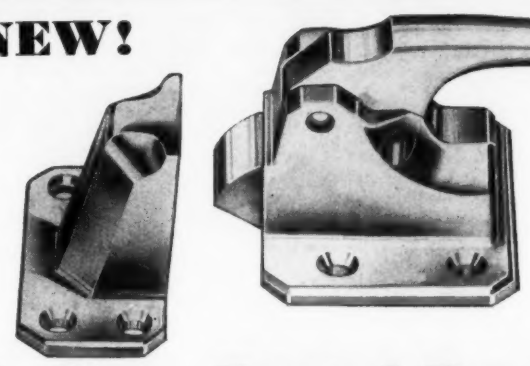

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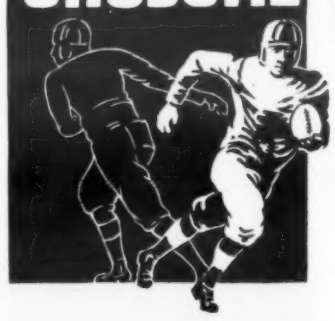
UNUSUAL FACTS IN SPORTS



Scores All Points—For Both Sides

Scoring all points for both sides is a distinction held by a halfback named Haines of the University of Washington! Playing So. California, 1935, Haines caught a kickoff on the one yard line and was pushed back over his own goal, scoring 2 points (a safety) for So. California. Later he ran 25 yards to a touchdown, Washington winning 6 to 2.

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FINE BUSINESS Opportunity for active and experienced partner for commercial refrigeration and air conditioning sales field with successfully established organization in metropolitan New York area. No investment required. References thoroughly investigated. Address all replies, covering complete information in first communication, to Box No. 145, Madison Square Station, New York City.

SALES SUPERVISOR to direct the activities of our Commercial Department in the Cleveland territory. Consideration will be given men who thoroughly understand commercial refrigeration and have some knowledge of air conditioning. This opening presents a real opportunity for a man who can assume responsibility and has a good sales record. Full particulars regarding experience and references must be given in first letter which will be held strictly confidential. YORK ICE MACHINERY CORPORATION, 2700 Washington Avenue, Cleveland, Ohio.

WANTED by large manufacturer in Detroit, engineer and draftsman thoroughly familiar with year-round residential air conditioning and self-contained room coolers. Box 860, Air Conditioning and Refrigeration News.

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ATTENTION Manufacturers and Distributors. We will purchase for cash any surplus quantity of domestic and commercial refrigerators or equipment. We refer you to the National City Bank, Gramercy Park, N. Y. C., for our financial responsibility. All transactions confidential. NATIONAL REFRIGERATOR CO., INC., 352 Fourth Ave., New York City.

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Patents

Issued September 15, 1936

2,054,073. HEAT EXCHANGE APPARATUS AND METHOD. Crosby Field, Brooklyn, N. Y., assignor, by mesne assignments, to Flakice Corp., Wilmington, Del. Application May 23, 1930, Serial No. 454,852. 69 Claims. (Cl. 62—105)

2,054,074. ICE MAKING AND APPARATUS. Crosby Field, Brooklyn, N. Y., assignor, by mesne assignments, to Flakice Corp., Wilmington, Del. Application May 23, 1930, Serial No. 454,853. Renewed Sept. 25, 1935. 28 Claims. (Cl. 62—105)

2,054,097. HARMONIC COMPRESSOR. James B. Replogle, Detroit, Mich. Application May 31, 1932, Serial No. 614,591. 12 Claims. (Cl. 230—55)

2,054,144. REFRIGERATING APPARATUS. Clarence J. Swigert, Detroit, Mich., assignor to General Motors Corp., Dayton, Ohio. Application July 19, 1934, Serial No. 736,003. 3 Claims. (Cl. 230—134)

2,054,158. PROCESS OF AND APPARATUS FOR AIR CONDITIONING. Joseph N. Hadjisky, Birmingham, Mich. Application Jan. 11, 1932, Serial No. 585,918. 29 Claims. (Cl. 62—176)

2,054,200. AIR CONDITIONING APPARATUS. George W. Langford, Ann Arbor, Mich. Application March 27, 1933, Serial No. 663,067. 5 Claims. (Cl. 219—39)

2,054,272. AIR CONDITIONER. Lewis W. Stouder, Ardmore, Okla. Application March 15, 1935, Serial No. 11,305. 2 Claims. (Cl. 261—91)

2,054,292. AIR CONDITIONING APPARATUS. Harmon Roscoe Maddocks, Boothbay Harbor, Maine. Application May 12, 1934, Serial No. 725,301. 8 Claims. (Cl. 261—15)

2,054,323. REFRIGERATING APPARATUS. William C. Holbrook, Dayton, Ohio, assignor, by mesne assignments, to General Motors Corp. Application Jan. 31, 1928, Serial No. 250,808. Renewed March 4, 1935. 2 Claims. (Cl. 220—9)

2,054,328. REFRIGERATING APPARATUS. Jesse G. King, Dayton, Ohio, assignor, by mesne assignments, to General Motors Corp. Application March 31, 1928, Serial No. 266,284. Renewed Aug. 10, 1934. 19 Claims. (Cl. 200—83)

2,054,331. CONTROL SYSTEM. James S. Locke, Minneapolis, Minn., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., Application June 28, 1934, Serial No. 732,837. 16 Claims. (Cl. 236—74)

2,054,350. AIR CONDITIONING APPARATUS. Alfred Weiland, Philadelphia, Pa., assignor to Baldwin-Southwark Corp. Application Dec. 1, 1933, Serial No. 700,526. 10 Claims. (Cl. 62—117)

2,054,404. REFRIGERATION APPARATUS. Joseph Askin, Buffalo, N. Y., assignor to Fedders Mfg. Co., Inc. Buffalo, N. Y. Application March 13, 1935, Serial No. 10,877. 2 Claims. (Cl. 62—126)

2,054,460. MEANS FOR DEFROSTING REFRIGERATING UNITS. Nathan F. Fretter, Cleveland Heights, Ohio. Application July 4, 1933, Serial No. 679,006. 17 Claims. (Cl. 62—126)

2,054,474. REFRIGERATING APPARATUS. Charles R. Wayman, Dayton, Ohio, assignor, by mesne assignments, to General Motors Corp. Application Nov. 23, 1931, Serial No. 576,632. 9 Claims. (Cl. 62—4)

2,054,482. REFRIGERATING APPARATUS. Cecil A. Mann, Dayton, Ohio, assignor, by mesne assignments, to General Motors Corp. Application Feb. 26, 1932, Serial No. 595,354. 10 Claims. (Cl. 91—46)

2,054,536. REFRIGERATING APPARATUS. Fred R. Erbach, Beloit, Wis., assignor to General Refrigeration Corp., Beloit, Wis. Application July 10, 1933, Serial No. 679,648. 9 Claims. (Cl. 62—4)

2,054,541. PORTABLE AIR CONDITIONER. Henry C. Hettinger, Chicago, Ill. Application July 18, 1935, Serial No. 31,992. 12 Claims. (Cl. 261—106)

2,054,542. REFRIGERATING MACHINE INDICATOR. William Hoelle, Chicago, Ill. Application June 21, 1934, Serial No. 731,613. 3 Claims. (Cl. 62—4)

2,054,652. FITTING FOR FLUID PRESSURE SYSTEMS. Burns Dick, Ferguson, Mo., assignor to Wagner Electric Corp., St. Louis, Mo. Application March 16, 1935, Serial No. 11,524. 15 Claims. (Cl. 60—54.6)

2,054,653. BLEEDING MEANS FOR FLUID PRESSURE MECHANISM. Burns Dick, Ferguson, Mo., assignor to Wagner Electric Corp., St. Louis, Mo. Application April 20, 1935, Serial No. 17,375. 6 Claims. (Cl. 60—54.6)

2,054,724. FREEZER MECHANISM. Ellis Fulton, Wheeling, W. Va. Application Aug. 30, 1933, Serial No. 687,528. 6 Claims. (Cl. 62—114)

DESIGNS

101,226. DESIGN FOR A REFRIGERATOR CABINET. Paul M. Koons, Muncie, Ind., assignor to Glascock Brothers Mfg. Co., Muncie, Ind. Application July 1, 1936, Serial No. 63,593. Term of patent 7 years.

101,228. DESIGN FOR A REFRIGERATOR CABINET. Paul M. Koons, Muncie, Ind., assignor to Glascock Brothers Mfg. Co., Muncie, Ind. Application July 1, 1936, Serial No. 63,595. Term of patent 7 years.

REISSUES

20,107. REFRIGERATING APPARATUS. Robert R. Candor, Dayton, Ohio, assignor, by mesne assignments, to General Motors Corp. Original No. 1,904,991, dated April 15, 1933, Serial No. 343,399, Feb. 28, 1929. Application for reissue Nov. 16, 1933, Serial No. 698,378. 17 Claims. (Cl. 62—115)

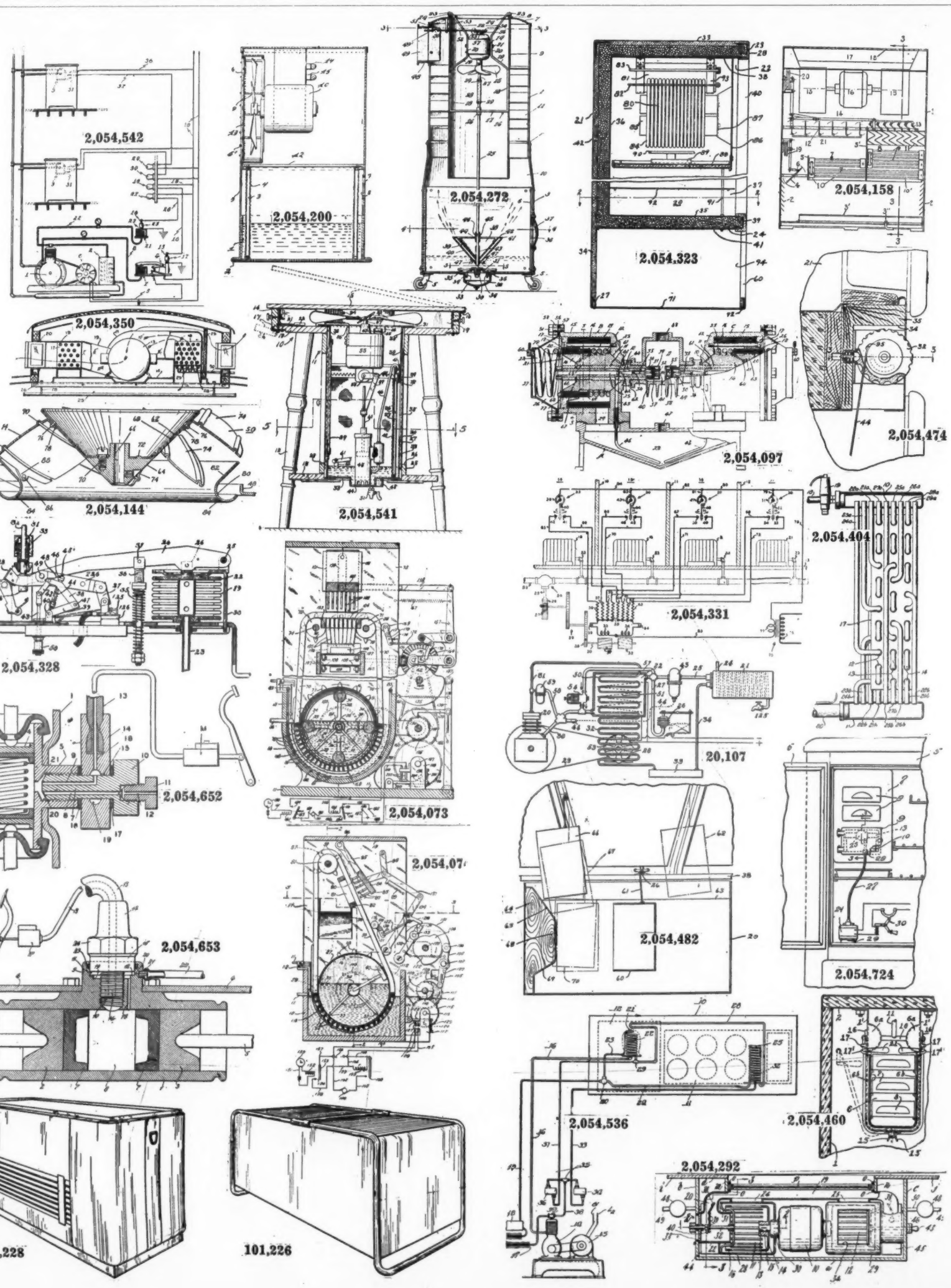
PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

Georgia Power Co. Tops Year's Commercial Quota

ATLANTA—Led by William A. Tadlock, commercial appliance salesmen of Georgia Power Co. have already topped the $300,000 quota set for the entire year's sales, with sales for the first seven months totaling $315,677.

Headlining these record sales results were commercial refrigeration at $177,463.17, water coolers at $30,795.53, and air conditioning at $12,949.30.



COMMERCIAL Service Manual

By K. M. NEWCUM

Compressor Shaft Seals Used On Commercial Units

CHAPTER 6—Commercial Condensing Units—Continued

Compressor Shaft Seals

The Universal Cooler revolving sylphon seal is illustrated in Fig. 56. This design employs a slightly different principle of effecting a seal between the crankcase and atmosphere.

Note the spring is inside the bellows or sylphon. The seal is attached to the revolving shaft and held in place by the large hex nut. A gas-tight joint is effected between the sylphon plate and a shoulder on the shaft by the pressure of the hex nut. In this respect the seal revolves with the shaft.

The second gas tight seal is effected between the seal nose or ring and the lapped surface of the housing plate.

Lubrication to the seal nose is provided by the splash system from the crankcase.

With this type of seal, the spring has a tendency to pull the shaft outward in the direction of the seal. A bearing surface is provided between the crankshaft and the main bearing in the housing plate. This bearing surface is lubricated by the oil in the crankcase.

A leaky seal of this type may be repaired by installing a new housing plate and a new seal. It is not necessary in this case to replace the shaft, as there is no friction between the seal and shaft, as is the case with the stationary type.

The housing plate may be resurfaced and lapped to a high polish. The seal may be reconditioned in a lathe. Neither of these parts should be reconditioned if they are worn badly, but should be discarded.

The York Balanseal is shown in Fig. 57 (A, B, and C). Note in Fig. 57A the polished shoulder on the crankshaft. Fig. 57B shows the service man installing the seal. Fig. 57C shows the seal and housing installed.

The design of the York seal, which is a Swedish steel diaphragm with a highly polished seal nose or wearing surface attached, is such that no springs are necessary.

The balancing feature provides for an even pressure between the seal nose and the shaft shoulder under variable pressure conditions.

The space between the diaphragm and the crankcase housing cover provides an oil reservoir while it furnishes lubrication to the seal.

The Curtis balanced stationary bellows type seal, as shown in Fig. 36, uses a multiplicity of calibrated springs to provide an even pressure on the seal nose.

Also will be noted that the seal nose rides against the inner face of the Timken bearing. With this design the seal may be replaced and a new bearing installed without replacing or reconditioning the shaft.

Calco Issues Booklet on Sulphur Dioxide

BOUND BROOK, N. J.—A booklet on sulphur dioxide and its properties and uses has recently been issued by Calco Chemical Co., Inc.

The booklet describes the use of sulphur dioxide in various industries such as oil refining, paper, textiles, tanning, refrigeration, and air conditioning, and illustrates typical methods of handling it. Tables giving physical properties are included.

Revolving Sylphon Seal

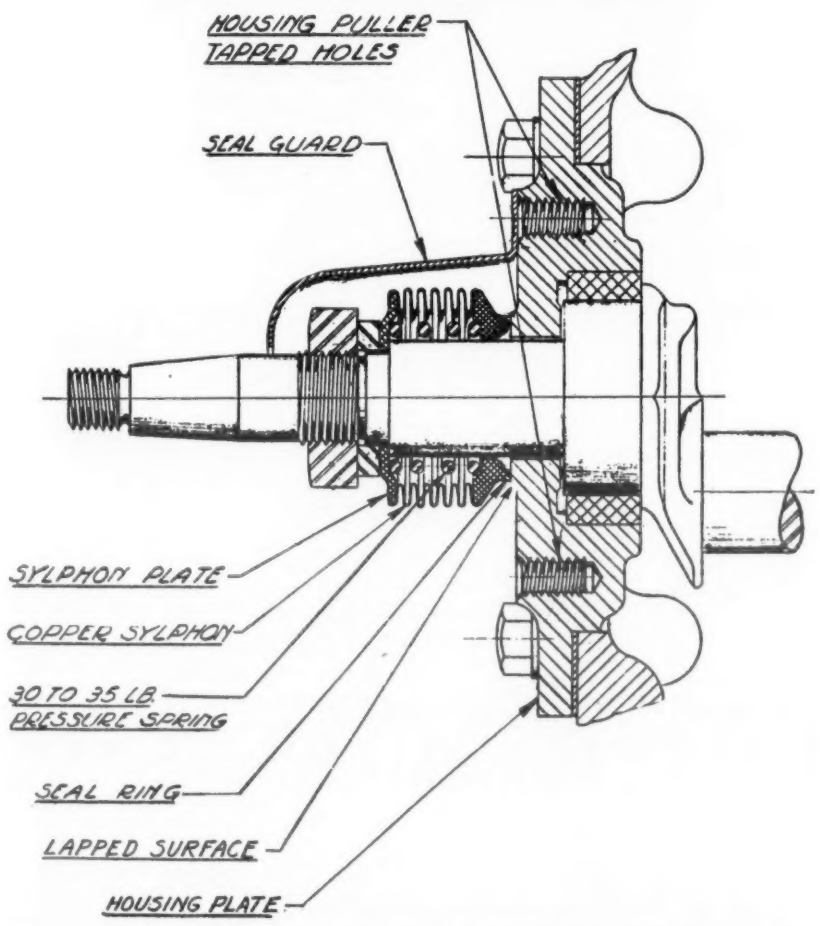


Fig. 56—Revolving sylphon seal. In this assembly a gas-tight seal is formed between the seal nose and a special machined surface on the crankcase housing cover.

York Balanseal Assembly

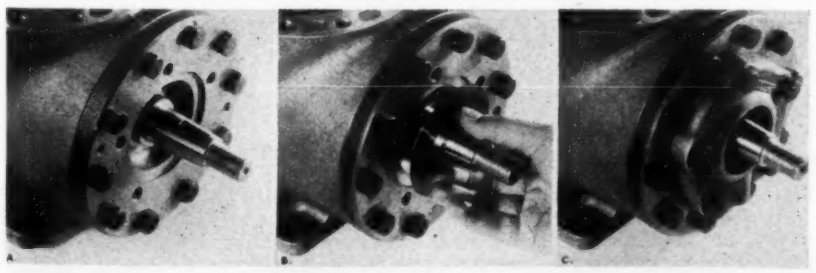


Fig. 57—"A" shows polished shoulder on crankshaft in York Balanseal shaft seal unit; "B" shows service man installing the seal; and "C" shows seal and housing installed.

If You're Starting the Manual This Week:

If you're starting the Commercial Service Manual this week, here's where you can find previously published articles in the series:

Aug. 5—Chapter 3: Refrigerants. Cylinders, valves, and safety devices required for refrigerants. (The first two chapers, dealing with the fundamentals of refrigeration, were omitted because they had already been covered in the NEWS.)

Aug. 12—(Chapter 3 Continued): The proper handling of refrigerants.

Aug. 19—(Chapter 3 Continued): Types of valves used on cylinders for storage of methyl chloride and Freon. Chapter 4: Method of changing refrigerants to smaller units.

Aug. 26—Chapter 5: The use of dryers in commercial refrigeration systems.

Sept. 2—Chapter 6: Commercial condensing units. Body and housing assemblies on commercial compressors.

Sept. 9—(Chapter 6 Continued): Crankshaft, eccentric, and connecting rod assemblies.

Sept. 16—(Chapter 6 Continued): Piston and piston valve assemblies.

Sept. 23—(Chapter 6 Continued): Discharge valve assemblies.

Sept. 30—(Chapter 6 Continued): Compressor suction valves and stuffing box seals.

No instalments were published in the issues of Oct. 7 and 14.

Service Department Accounts for Third Of Dealer's Volume

FALLS CITY, Neb.—Service department of the Gerhardt Electric Co., here, is responsible for a third of the company's entire business volume, believes Elmer Gerhardt, who with his brother Walter, operates the store.

The plan by which they handle service work is this: the serviceman is on a salary which is increased as business zooms. He is paid no commissions. On all service trips 10 cents a mile, each way, is charged the customer. Time is figured at about $1 an hour; parts are charged as rated. This plan makes each service call carry its own expense, and helps to cover his salary.

Service trips are routed to include a number of calls whenever this is possible. When this happens the mile rate is allocated to each customer.

In addition to his service work, the electrician talks up new models, gives appraisals for trade-ins, leaves manufacturer's folders with prospects, and promotes the sale of other appliances.

Being a year-round employe, he services radios, refrigeration units, washing machines, and minor appliances. From his leads salesmen make contacts and close sales.

His calls are covered in the charge; therefore whatever is sold as a result of the leads is full-profit business.

R & H Issues Manual on Surface Preparation

WILMINGTON, Del. — A manual giving detailed methods for the application of sodium cyanide solutions in the preparation of metal surfaces has been published by R. & H. Chemicals Department, E. I. du Pont de Nemours & Co., Inc. The manual gives a general outline for the various methods used in treating metal surfaces, with specific information regarding the use and handling of sodium cyanide in that field.

Preparation of metal surfaces is discussed under the following general headings: Steel finishes, metal surfaces, direct application of sodium cyanide, cleaning ferrous metal surfaces, preparation of hot rolled steel surfaces, cleaning non-ferrous metal surfaces, preparation of steel surfaces for enameling, preparing metal surfaces, and safe handling of sodium cyanide.

General Electric Markets Glyptal Cement

BRIDGEPORT, Conn. — Glyptal cement, a derivative of Glyptal alkyd resins, said to be flexible, transparent, and exceptionally adhesive, is being placed on the market by General Electric Co.'s appliance and merchandising department.

It will mend or adhere to all common materials except rubber, and is both water and oil-resistant.

For domestic use, the new cement is being merchandised through retail household outlets in a handy display containing 12 of the tubes.

For industrial and commercial use, it is offered in quantities varying from pint size to larger drums.

The Buyer's Guide

Suppliers Specializing in Service to the Refrigeration and Air Conditioning Industries

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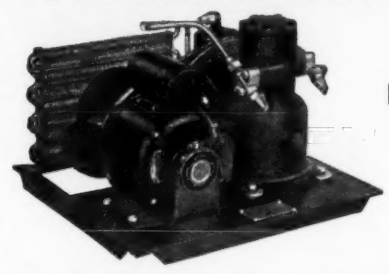

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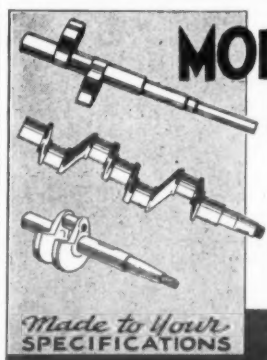

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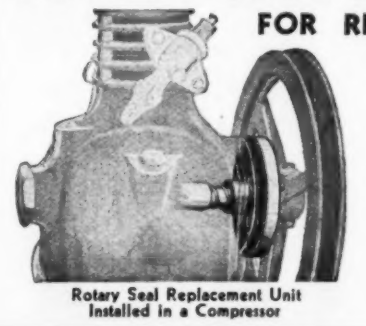

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